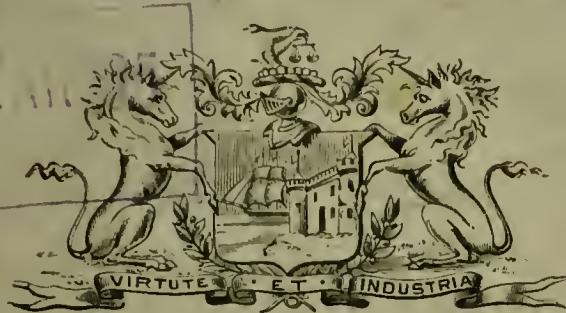


With the Medical Officer of Health's Compliments.

1891.

2



CITY & COUNTY OF BRISTOL.

Port of Bristol.

ANNUAL REPORT OF THE Medical Officer of Health.

REPORT OF THE BOROUGH SURVEYOR ON WORKS EXECUTED
DURING THE YEAR 1891.

Printed by Order of the Sanitary Committee.

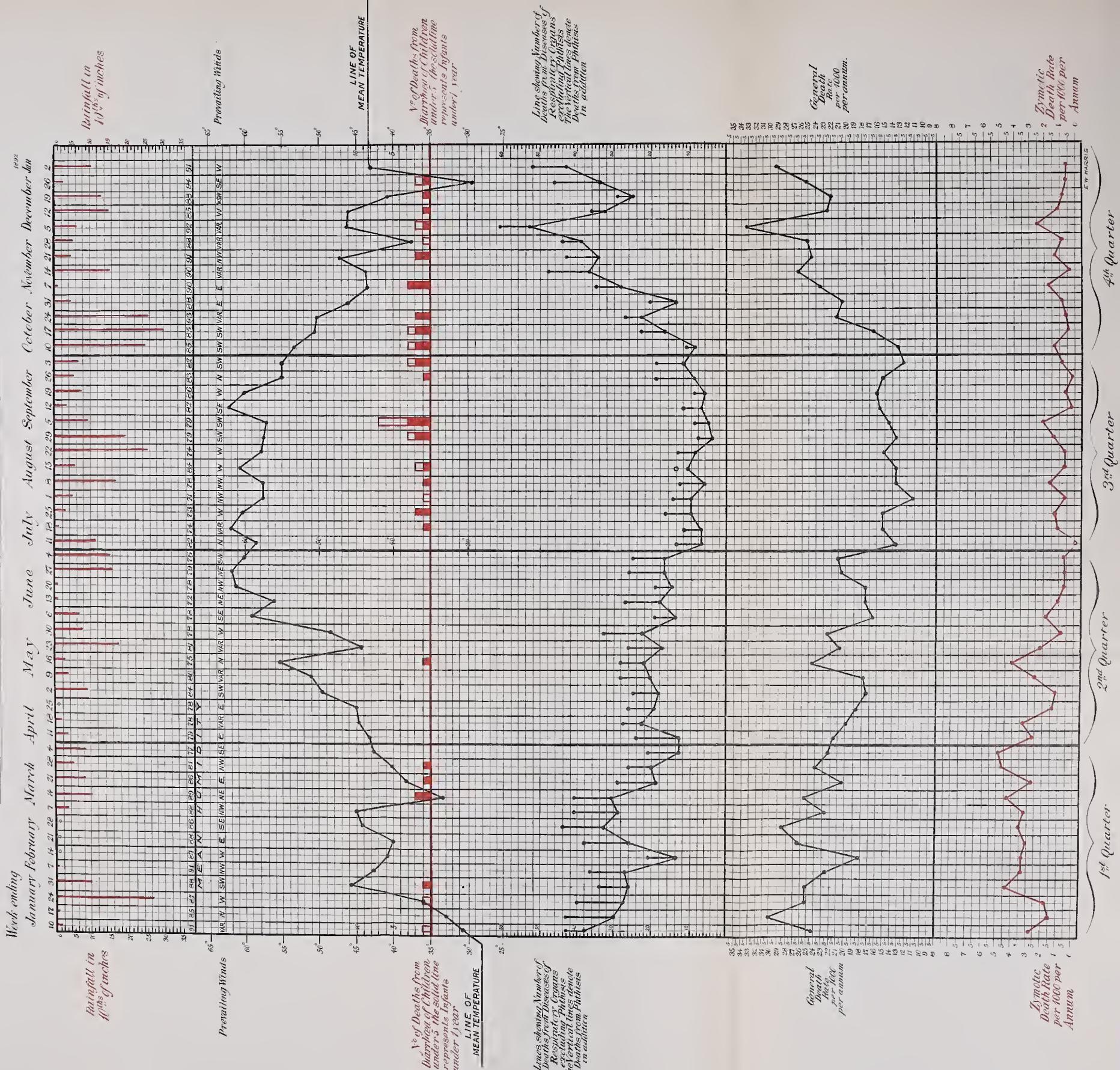
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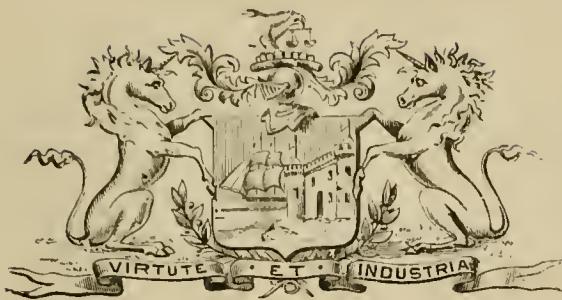
1892.

CHART

Showing Mean Temperature Rainfall relative Humidity (saturation- 100) prevailing Whks, also Number of Deaths returned from Diseases of Respiratory Organs (excluding Phthisis, from Phthisis and from Biliaria, the General Death Rate and the Zymotic Death Rate in the Bristol Sanitary District for each Week of the Year 1891



1891.



CITY & COUNTY OF BRISTOL.

Port of Bristol.

ANNUAL REPORT

OF THE

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1892.

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SANITARY COMMITTEE,

1891-92.

The Mayor: Dr. CHARLES HIGHETT.

Chairman: MR. ALDERMAN COPE-PROCTOR.

Vice-Chairman: Mr. COUNCILLOR PEARSON.

Mr. COUNCILLOR BARNETT.

Mr. COUNCILLOR LEVY.

Mr. COUNCILLOR BASTOW.

Mr. COUNCILLOR LEWIS.

Mr. COUNCILLOR COULTHARD.

Mr. COUNCILLOR LLOYD.

Mr. ALDERMAN DIX.

Mr. COUNCILLOR ROGERS.

Mr. COUNCILLOR FEAR.

Mr. COUNCILLOR SWAISH.

Mr. COUNCILLOR JEFFERIES.

Mr. COUNCILLOR TODD.

BRISTOL URBAN SANITARY AUTHORITY.

MEDICAL OFFICER OF HEALTH'S DEPARTMENT, 1891-92.

Medical Officer of Health—

D. S. DAVIES, M.D., LOND., D.P.H., CAMB.

Inspector of Nuisances—Chief Inspector J. W. KIRLEY.

Superintendent Inspector— † T. LOWTHER.*

District Sanitary Inspectors—

District No. 1—* J. WILKINSON.

No. 2—* H. HASELL.

No. 3—* † W. H. PERRY.

No. 4—G. E. BUSH.

No. 5—F. R. SLADE.

No. 6—H. CALCUTT.

No. 7—* J. F. LYONS.

Special Sanitary Inspectors—

Inspector of Bakehouses and Common Lodging Houses—

* S. O. DIMOND.

Inspector of Meat, Fish, and Slaughter Houses—G. DENT.

Inspector of Dairies, Cowsheds, and Milkshops— † E. J. CASELY.*

Inspector of Houses Let in Lodgings— H. J. KIRLEY.*

Inspector of Workshops, Smoke, and Offensive Trades—

* † J. F. COTTY.

Statistical Clerk—E. W. HARRIS.

Clerk—R. R. WARREN.

BRISTOL PORT SANITARY AUTHORITY.

Medical Officer of Health—

D. S. DAVIES, M.D. (LOND.), D.P.H. (CAMB.)

Assistant Port Medical Officer of Health—

J. C. HEAVEN, I.R.C.P., M.R.C.S., D.P.H.

Port Inspector of Nuisances— S. O. DIMOND.*

Port Sanitary Inspector at Avonmouth—A. DICKENS.

*Avonmouth Hospital Caretaker and Assistant
Inspector and Boatman—J. REX.*

* Certified Inspector Sanitary Institute.

† Certified Surveyor Sanitary Institute.

‡ Registered Plumber.

Report.

To THE CHAIRMAN AND MEMBERS OF THE SANITARY COMMITTEE.

Report for the Year 1891.

PART I.

PUBLIC HEALTH OFFICES,

40 PRINCE STREET, BRISTOL,

March, 1892.

MR. CHAIRMAN AND GENTLEMEN,

Legislation has during the last three years added considerably to the powers and responsibilities of Urban Sanitary Authorities, and in a variety of directions has widened and increased the work of control properly belonging to the Health Department. Thus, The Notification Act of 1889, by furnishing a fairly complete and accurate knowledge of the distribution of certain communicable diseases in the City, has already enabled early and successful measures of prevention to be taken upon more than one occasion, notably in the January milk-epidemic of Scarlet Fever, and in the April—July outbreak of Small Pox. The Infectious Disease Prevention Act of 1890 has supplied some much needed and practical modifications, conformable to advanced knowledge, of the Infectious Disease Provisions of The Public Health Act ; while The Public Health Act's Amendment Act of the same year has similarly extended and amplified certain important Sanitary Provisions of the chief Act.

The Housing of the Working Classes Act, 1890, by its consolidation and amendment of the law upon the subject, at length put workable powers into the hands of Sanitary Authorities, and a considerable amount of steady improvement has been secured since the passing of the Act in August, 1890.

The provisions of Part II. of the Act, those relating to single houses unfit for habitation, and to obstructive houses, have proved most useful in this city. No large areas, in which the exercise of the powers conferred in Part I. appears to be advisable, have come under notice.

Particulars as to those houses which have been dealt with during the year, will be found in Part II., Systematic Inspections.

The principal statute of the year affecting this department is The Factory and Workshop Act, 1891, which transfers the Sanitary control of "Workshops" and "Workplaces" from the *Inspector of Factories* to the Sanitary Authority. I prepared and presented to your Committee a report upon this Act and allied Acts, which was adopted and ordered to be printed, and from which the following summary is taken:—

Summary of Powers and Duties of an Urban Sanitary Authority under The Factory and Workshop Acts, as amended by the Act of 1891.

1. The Sanitary Authority may cause proper privy accommodation to be provided for *Workshops* or *Manufactories*, and for both sexes ("Public Health Act's Amendment Act, 1890," sec. 22).
2. The control of *Workshops* is taken from the Factory Inspector and given to the Sanitary Authority. *Workshops* include "Adult-Male" workshops for these purposes ("Factory and Workshop Act, 1891," sec. 3 (2)).
3. It is the duty of the Sanitary Authority to take action in case of, and to secure abatement of all effluvium

and privy nuisances in Workshops (sec. 4 (1) "Factory and Workshop Act, 1891.")

4. It is the duty of the Sanitary Authority to secure lime-washing in cases where the Medical Officer of Health or Inspector of Nuisances certifies it to be necessary ("Factory and Workshop Act, 1891," 4 (2)).
5. It is the duty of the Sanitary Authority to cause Systematic Inspection to be made ("Public Health Act, 1875," sec. 92).
6. It is the duty of the Sanitary Authority to secure proper ventilation, and to prevent overcrowding of workshops ("Public Health Act, 1875," sec. 91.)
7. If they neglect either of duties 3, 4, or 6 (relating to effluvium and privy nuisances, cleanliness, lime-washing, ventilation and overcrowding), the Secretary of State may direct the Factory Inspector to inspect *Workshops, or Laundries*, take necessary proceedings, and recover expenses from the Sanitary Authority. ("Factory and Workshop Act, 1891," sec. 1 and 2.)
8. In case of offences or Sanitary defects coming under The Public Health Act, 1875, in *Factories* or *Workshops*, the Inspector of Factories shall give notice to the Sanitary Authority, who shall take the necessary proceedings, (sec. 4, "Factory and Workshop Act, 1878"); and if they do not do so within a reasonable time, the Inspector of Factories may take action and recover expenses from the Sanitary Authority. ("Factory and Workshop Act, 1891," sec. 2 (2)).
9. The Sanitary Authority has power to secure a proper supply of water in all Workshops ("Public Health Act, 1875," sec. 62 and sec. 4).

Your Committee has, in accordance with my recommendation contained in the report, appointed one of the District

Inspectors, possessing technical knowledge to qualify him for the position, as Special Inspector of Workshops, Smoke and Offensive Trades, and has appointed an additional Inspector to supply his place in district inspection. The staff of the Health Department has also been re-arranged to meet the increased work, and is now constituted as shown upon an initial page of this report. The effect of the Act will apparently be to place under the control of this department some two or three thousand workshops which will need systematic and constant supervision.

Opportunity has been taken in the appointment of a Special Inspector for this purpose, to add to his duties the inspection of Offensive Trades and of Smoke Nuisances, in order that these matters may receive more direct and continuous attention than has hitherto been possible.

Notification and Hospital Isolation.

One of the very early results of the adoption of the Notification Act was to increase our knowledge of cases requiring isolation, and in consequence, a much larger number of cases has been under treatment in both of the years 1890 and 1891, during which Notification has been in force, than at any previous period. The result is so far encouraging, that I feel sure there will be little difficulty in securing the removal to hospital of a very large per-cent-age of cases requiring isolation, when there is more room and when the available accommodation is more satisfactory.

The site purchased by your Authority, consisting of thirteen acres, within easy distance of the City, but well isolated and healthily situated, will afford ample accommodation for erecting suitable and sufficient ward blocks for all cases requiring isolation. Part of this site has just (March 25th, 1892) come into your possession, and the plans for draining, fencing, and the erection of the first eighty beds, with the necessary administrative buildings are already in a forward state of preparation. I trust that at the year's end substantial progress will have to be recorded.

I am, Gentlemen,

Your obedient servant,

D. S. DAVIES, M.D., (Lond.), D.P.H., (Cantab.)
Medical Officer of Health.

General Sanitary Condition of the City and County of Bristol at the end of the Year 1891.

Limits.

The limits of the Urban Sanitary District are coterminous with those of the City and County of Bristol ; the new Parliamentary Borough has much wider limits.

This Urban District is bounded on the North by the Parish of Westbury in the Barton Regis Rural Sanitary District, and by the Local Board District of Horfield. On the East by the Local Board District of Stapleton ; and by the Local Board District of St. George ; and on the South and West by the Bedminster Rural Sanitary District, from which, towards the West, it is separated by the River Avon.

Site and Soil.

Bristol is situated in N. Lat. $51^{\circ} 27' 6\cdot3''$ and W. Long. $2^{\circ} 35' 28\cdot6''$ The old City lies in great part on low ground in a broad valley lined by the alluvial deposit of the Avon and its tributary the Frome ; parts of the City, *e.g.*, High Street and Redcliff, being upon higher ground on the new red sandstone (rias), through which rock the New Cut, or artificial course of the Avon, has been cut, and upon which Bedminster is built.

The high table land of Clifton, Cotham and Redland to the North and West of the city is situated upon the denuded edges of an anticlinal arch of carboniferous rocks, upon which, in certain limited areas, beds of newer formation (*e.g.*, lias) lie unconformably. On Clifton and Durdham Down the carboniferous limestone is exposed over a large area ; and here the Avon Gorge, cut by the river as it turns to the north to join the Severn, forms the Western boundary of the district.

The steep ascents, extending from Granby Hill on the West, past Brandon Hill to St. Michael's Hill and Marlborough Hill on the East, are on the outcrop of the millstone grit.

Considerable portions of the North-east and East parts of the city lie upon the new red sandstone, while Totterdown, part of Cotham, and the slope towards Ashley are upon beds of lias limestone.

* Water Supply.

The Water Supply is in the hands of a private Company, and is obtained by gravitation from springs in the triassic conglomerates, and in the carboniferous limestone on the sides of the Mendips, at distances of from 5 to 16 miles from the City. The water from two of these springs (Sherborne and Coldbath) is brought direct into the City; that from the other springs is intercepted by the storage reservoirs at Barrow Gurney, 310 feet above Ordnance datum, with an extreme holding capacity of 750,000,000 gallons, whence it is brought into the City, joining the direct supplies at Redcliff. The combined waters supply the lower parts of the City *en route*, and also rise by gravitation to the pumping station and reservoir at Oakfield Road (200 feet above O.D.), from which they are pumped up to the Durdham Down service reservoir (320 feet), for the supply of Clifton and the higher parts of the district.

After the dry winters of 1861-63, it was found necessary to provide permanent pumping works for a supplementary supply in dry years, from wells at Chelvey, eight miles from Bristol, sunk in the new red sandstone (triassic), 200 yards from any inhabited place. These pumping works are now in course of duplication.

The water is supplied to the City at constant service, and the present daily supply per head is calculated at about 23 gallons.

All water supplied from the Barrow store reservoirs is now filtered before delivery.

As to any risk of excremental contamination, the water appears to be above suspicion; and no case of disease has within our knowledge ever been traced to its use.

* I am indebted to A. J. Alexander, Esq., the Secretary to the Bristol Water Works, for correction of particulars relating to Water Supply.

A recent Analysis* of the Bristol Water Company's supply drawn from service pipes in College Green and at Ashton Gate Board Schools, mixed, gave the following results :—

Saline Ammonia	...	...	...	less than .005
Albuminoid Ammonia	...	...	..	„ „ „ .002
Nitrogen as Nitrates	...	...	...	.083
Oxygen required to Oxidize, 1 hour		...	...	.014
„ „ „ 3 hours		...	...	.021
Hardness by Soap test	...	...	{	Total 19.0° Permanent 6½°
Magnesium precipitated on Boiling		...		.24
„ not precipitated	...	...		.36
	Total	...		.60
Calcium precipitated on Boiling	...	...		5.07
„ not precipitated	...	...		1.79
	Total	...		6.86
Sodium with a small amount of Potassium	...	...		.50
Chlorine	...	...		.77
Sulphuric Radical (SO ₄)	...	...		1.33
Nitrie Radical (NO ₃)	...	...		.37
Carbonic Radical (CO ₂) with trace of Phosphoric Acid, Silica, Organic Matters, &c.	...			12.25
Lead, Copper, Arsenic, and other poisonous metals	...	...	...	Absent
				22.68
These Constituents may conveniently be regarded as being combined together, thus—				
Carbonate of Lime	...	...		17.2
„ Magnesia	...	...		.7
Sulphate of Magnesia	...	...		1.7
Nitrate of Magnesia	...	..		.5
Chloride of Sodium (with a little Chloride of Potassium)	...	...		1.3
Silica, Phosphoric Acid, Organic Matters, &c.				1.2
				22.6

The Company has power to make an annual charge for each closet flush, in addition to the charges for other domestic purposes ; hence the majority of out-door closets throughout the City are dependent upon hand-flushing.

New source of Supply.—In 1888 the Company obtained powers to take the Richford Spring, near Blagdon, and the Langford Spring, at Langford, subject to a reservation of prior claims of the district upon those springs ; and in 1889 they obtained powers to make a reservoir by impounding the river Yeo. This reservoir, to contain a maximum of 1,700,000,000 gallons, will receive the water from these combined sources, and from it the water will be lifted to join the storage at Barrow. The source of the Yeo is from deep springs, similar to those furnishing the established supply.

Sewerage and Drainage.

The district is entirely drained by a system of sewers, which are constructed to take all storm water ; all the street gullies are trapped, and the sewers are without any external openings or means of ventilation. They discharge at five points into the tidal Avon, and are so constructed with regard to capacity, fall, and position, that they may ultimately converge to one point, at which the sewage may be discharged, or from which an outfall sewer may be continued to any suitable point further down the river, or to the Bristol Channel, if found to be necessary.

The Drains of all new houses, and of older houses where reconstruction becomes necessary, are required to be properly trapped off from the sewers, and these house drains are also required to be properly ventilated by, at least, two openings, so as to admit of the passage of a current of air. Also, all rain water pipes and bath, sink, or lavatory wastes are required to discharge into the open air over a properly trapped yard-gully which communicates with the drain. The necessity for the construction of proper manholes or inspection shafts over the main trap, and also at sharp bends or corners, is becoming

year by year more appreciated, as the economy of this plan, in preventing costly and troublesome digging-out on the occasion of every slight stoppage, becomes apparent.

The erection of *New Houses*, together with their drainage, is entirely controlled in the Surveyor's department.

Disposal of House Refuse and Ashes.

The deposition of large quantities of house refuse and ashes at "depôts" or "tips" approved by your Committee, has of late years, owing to the extension of the City and the consequent difficulty of finding space where refuse can be deposited without offence, become the cause of considerable complaint; and it has for some time past become sufficiently evident that some other means must be adopted for getting rid of or rendering innocuous this waste material.

The plan of incineration of this refuse in a "Destructor" has commended itself to your Committee, and the City Engineer informs me that one of 16 cells is in course of construction, estimated to deal with the house refuse of a population of 160,000 persons. Two-thirds of the City refuse will thus be "converted" upon completion of this "Destructor," and if it should be considered desirable to treat the remaining third in a similar manner, it will be necessary to construct another "Destructor" of at least 8 cells to enable the whole to be dealt with. All fumes resulting from the "conversion" will be passed through a Jones' Cremator, so as to minimise any offensive odours, and I trust this plan will prove to be a satisfactory and complete solution of a difficult question.

Public Slaughter-Houses.

While the condition of Bristol slaughter-houses is, as pointed out in Part II, kept fairly satisfactory by constant inspection, there is no doubt that the erection of a public abattoir or abattoirs would be of great service in some districts where the slaughter-houses are not only inconvenient in themselves, but badly situated in reference to dwelling-houses.

The yearly licensing of slaughter-houses now possible by Sec. 29 of the Public Health Acts Amendment Act, 1890, puts a useful controlling power into the hands of your Authority.

PART II.

Report of Inspector of Nuisances.**1891.**

PUBLIC HEALTH DEPARTMENT,

40 PRINCE STREET,

*February, 1892.**To THE BRISTOL URBAN SANITARY COMMITTEE,***GENTLEMEN,**

I beg to submit the following brief Report of work done in the Health Department during the year 1891, with tables appended, showing the nature and number of Nuisances abated, and various other necessary particulars.

A reference to these tables will show that the total number of Nuisances abated by the District Inspectors is slightly less than last year, viz., 3,385, against 4,289, whilst the number of re-visits required to see the necessary works for the abatement of these Nuisances properly carried out was 12,684, against 10,882 last year.

The number of dirty or dilapidated houses that were cleansed and repaired by the owners, under Notice from the District Inspectors, also shows a diminution; this is attributable to the system of house to house visits made by the Special Inspectors, and the action taken under the Housing of the Working Classes Act, 1890 (see full particulars in appended tables).

The enquiries and consequent clerical work rendered necessary by the working of the Infectious Disease (Notification) Act, have occupied much of the time of the District and Assistant District

Inspectors: this will be at once understood when I state that 1,270 cases were notified to the Medical Officer of Health during the year, their surroundings duly enquired into, and the sanitary conditions of the houses in which they occurred thoroughly examined, and very frequently in the case of adult patients, the sanitary condition of their places of work were also examined, and whenever sanitary defects were found they were remedied as quickly as possible.

The working of this Act has also caused a considerable increase in the number of houses and their contents requiring disinfection, viz., 879 houses and 31,112 articles of bedding and clothing removed therefrom and disinfected in the Washington Lyons Steam Disinfector, and again returned to the owners, without any complaints being received of the loss of or damage to a single article, this at once shows the careful supervision this work receives at the hands of your Inspectors.

1,237 complaints and applications were received and duly enquired into, and all particulars relating thereto recorded in the Complaint Book; many of these were of an unimportant, and some of a frivolous nature, but all received the necessary attention.

As in previous years, so in this, the informal notices served for the abatement of nuisances have been very successful. Only in 101 cases was it found necessary to serve formal notices on the various owners, whilst the owners of 40 houses were summoned before the Justices for various nuisances existing thereat, 27 of these being under the provisions of the Housing of the Working Classes Act, 1890, 3 others were also summoned for not removing manure from stables and mews in accordance with regulations, and 2 for having diseased meat in their possession. It will, no doubt, be satisfactory to your Committee to know that every case so taken was successful; full particulars with names are appended.

Full details of work done by the Inspectors of bakehouses, common lodging houses, houses let in lodgings, meat, fish, and slaughter houses, dairies, cowsheds, and milk shops, and by those engaged in house to house inspection are appended separately

under each head, a reference to which will show that altogether nuisances existing at 3,711 houses were abated, but the actual number of such nuisances, including w.c.'s renewed or amended, sinks trapped, &c., amounts to 8,641.

The main sewers were, as usual during the summer and autumn months, disinfected with sulphate of iron, but in consequence of so much rain this was not required to such an extent as usual. The gratuitous distribution of carbolic and other disinfecting powders in the poor districts has gone on as usual.

The various courts, &c., throughout the City have received due attention, particularly the w.c. accommodation, which is being much improved, as the old arrangements are from time to time found defective; in two instances trough closets with automatic flush have been provided.

The Assistant Inspector of houses let in lodgings (Inspector LYONS) was specially engaged for seven weeks at the end of the year, superintending the removal of human remains from a portion of St. Augustine's Churchyard required for Dock Improvements, when the remains of 1,184 were removed, and re-interred at the Cemetery. The work was completed satisfactorily, and approval of the Inspector's execution of his duties was expressed both by the Vestry and by the Dock's Engineer.

Housing of the Working Classes Act, 1890.

Between the early part of November, 1890, and the 31st December, 1891, I have reported 108 houses to your Committee as being unfit for human habitation, and by your orders served the necessary notices on the various owners, with the following result :—

Closed under Justices order	...	...	...	27
Closed by owner without such order	...	...	...	36
Made habitable	...	...	...	33
Remaining to be dealt with	..	...	...	12
				—
				108
				—

Of the 27 closed by order of the Justices, 8 have since been made habitable and re-occupied, all of which are now fair artizans' dwellings, leaving 19 still closed, which cannot well be repaired. Of the 36 closed by owners under the notices served on them, without the Justices' order, 13 have been demolished altogether, 4 are now under repair, and the other 19 cannot well be made habitable. It will thus be seen that 51 such houses have been permanently closed or demolished.

I am, Gentlemen,

Your obedient servant,

JAMES W. KIRLEY,

Chief Inspector of Nuisances.

Summary of Nuisances abated and Work done by the District Inspectors, and by the Special Inspectors in the Health Department.

STATEMENT PREPARED BY THE CHIEF INSPECTOR OF
1891. NUISANCES.

Number of Complaints received and attended to	...	...	...	...	...	1,251
Total number of visits and re-visits in order to secure completion of work in the various departments	...	...	...	...	34,209	
Total number of Nuisances abated in the various departments	...	...	...	...	5,101	
Nuisances abated by the	District Inspectors	...	...	...	3,385	
	Inspector of Slaughter Houses	...	...	...	55	
	„ Bakehouses	...	...	...	80	
	„ Common Lodging Houses	...	...	...	26	
	„ Milk Shops, &c.	...	...	...	378	
	„ Houses Let in Lodgings...	...	...	...	603	
	House to House Inspectors	...	...	...	574	
					5,101	

PARTICULARS OF NUISANCES ABATED BY THE DISTRICT
INSPECTORS—

House drains entirely relaid, trapped, and ventilated	301
House drains partially relaid, trapped, and ventilated	709
W.C.'s fitted with new pans, &c.	1,239
W.C.'s cleansed and amended	242
Dirty and dilapidated houses cleansed and repaired	159
Yards paved by owners	236
Offensive deposits removed	145
Cesspools abolished...	15
Keeping of pigs and other animals prohibited	171
Overcrowding, cases of	43
Smoke Nuisances	7
Offensive Trades	4
Other Nuisances	114
	3,385

Offensive Trades—

Number visited	57
----------------	-----	-----	-----	-----	-----	----

Water Supply—

Polluted wells closed	14
-----------------------	-----	-----	-----	-----	----

Company's water supply provided to houses	24
---	-----	-----	-----	-----	----

Smoke—

Observations taken	120
--------------------	-----	-----	-----	-----	-----

Drain Testing—

Number of times smoke test applied	909
------------------------------------	-----	-----	-----	-----	-----

Disinfection—

Houses disinfected after infectious disease	879
---	-----	-----	-----	-----	-----

Articles of bedding and clothing disinfected	31,112
--	-----	-----	-----	-----	--------

Articles burnt	55
----------------	-----	-----	-----	-----	----

Total number of infected articles dealt with	31,167
--	-----	-----	-----	-----	--------

TABLE SHOWING NUMBER OF NUISANCES ABATED AND OTHER
WORK DONE IN EACH YEAR SINCE 1884.

	1884	1885	1886	1887	1888	1889	1890	1891
Number of Nuisances abated	1943	2167	2424	3101	3139	3672	5600	5101
Polluted Wells closed	21	15	16	17	18	48	35	14
Houses supplied with Co.'s Water	27	35	27	29	36	113	68	24
Houses disinfected	131	132	215	541	403	264	558	879
Articles of bedding, &c., disinfected	3919	5580	7727	19563	23233	14462	20523	31112

JAMES W. KIRLEY,

Chief Inspector of Nuisances.

DETAILS OF SYSTEMATIC INSPECTION.

Bakehouses.

(Factory and Workshop Acts, 1878, 1883, and 1891).

41 *Vic.*, c. 16, and 46 and 47 *Vic.*, c. 53.

Systematic Inspection commenced in 1884.

Inspector—S. O. DIMOND.

The various duties imposed by the provisions of these Acts relating to the “keeping Bakehouses in a cleanly state, free from effluvia from drains, privies and other nuisances, to over-crowding, and ventilation for the proper removal of gases and vapours generated in the process of manufacture, to the position of water closets, privies, and sleeping places, the provision of a proper water supply, to lime-washing, and to other Sanitary conditions,” have been systematically carried out, and the result has been that the gradual improvement resulting from the regular inspection carried on in previous years has been maintained, and in addition considerable improvement has been secured in the buildings, and in the construction of better ovens, so as to improve materially the conditions under which the persons engaged in these places work. It is satisfactory to add, that the necessity for such improvement is now generally admitted by most masters as well as by the workmen.

Forty-four contraventions of the lime-washing regulations were found, or 7 in excess of the number found last year, but there were only 28 nuisances from defective drains, against 47 in the previous year, and all these defects were remedied at once upon service of notice.

Eight cases in which roofs or floors were defective were noticed and dealt with, and much attention in the latter respect is required as it is essential, owing to the nature of the business, that the floors should be kept in good repair, or the necessary cleaning operations cannot be satisfactorily carried out. This applies

especially to the confectionery business, in which the collection of sugar, egg, flour, and jam upon the floors, forms, if neglected, a tenacious and thick coating, which is with difficulty removed

Inspection of Common Lodging Houses.

1891.

(*Bye-laws dated 1882, made under Public Health Act, 1875.*)

Inspector—S. O. DIMOND.

A considerable amount of attention has been given to the condition of these houses, and some advance has been made in the gradual improvement secured by the systematic inspection of previous years. In certain instances, where the occupiers were not as careful as could be desired, closer attendance to the regulations has been obtained, and better beds have been provided where required; also any unsatisfactory conditions found arising from neglect have been dealt with by notice, the requirements being complied with in every case.

Nine notices were served to supply improved sanitary arrangements or to secure repairs to existing drains or premises, and all were attended to.

The same difficulty in keeping many of these houses in repair has been experienced, as in former years, for many of them are indifferently constructed and very old, so that they constantly require repairs to roofs and floors, or fresh plastering; but the necessary work has been secured upon service of notice, without the necessity of recourse to legal proceedings.

The number of persons using these houses has slightly fallen off during the year, and no overcrowding has taken place.

The record of freedom from infectious disease that has existed for the last five years, has been broken during 1891, as a child of one of the occupiers developed Scarlet Fever, and a lodger from another house, on being admitted to the Union Hospital, was reported to be suffering from Enteric Fever, and in both cases all necessary disinfection, fumigation, and cleaning was done and no extension of the disease in either case occurred.

Table 1. **Table of Bakehouse Inspection for the Year.
1891.** With particulars of Condition, Contraventions, Action taken, and Result

Total number of visits and inspections	...	...	...	...	1059
Number of visits to Bakehouses, at which they were found in good order	...	...	...	...
Ditto	ditto	ditto	in fair and passable order	...	482
Ditto	ditto	ditto	not in satisfactory condition from one or more of the undermentioned causes	...	...
Number of visits made in connection with Notices given, and seeing to proper compliance with same	...	...	...	...	155
About 270 Bakehouses were in operation during the year				...	1059
					1059

Table 1—*Continued.*

PARTICULARS OF DEFECTS.

Contraventions of lime-washing regulations, and want of proper cleansing	44	Informal Notices given for the removal of defects and complied with	47
Bakehouse premises with defective drains found thereon	28	Written Notices served and complied with	33
Repairs of floors and roofs	8	Formal Notices now running	0
			80

S. O. DIMOND,

Inspector.

Table II.
Showing Defects found and remedied in each
year since Bakehouse Inspection was in-
stituted.

YEAR.	PARTICULARS.	TOTALS.
1884	Total contraventions in respect of cleansing, lime-washing, defective drains, repairs, and defective ventilation.	342
1885	Ditto	244
1886	Ditto	96
1887	Ditto	132
1888	Ditto	69
1889	Ditto	65
1890	Ditto	89
1891	Ditto	80

**Summary—Common Lodging House Inspection,
and Work done during the Year.**

1891.

No. of Houses on Register.	Registered Rooms contained.	Certified to Accommodate.
50	245	1108

The Rooms contain 85 Double Beds (Separated).
30 Single Beds for Women.
908 Single Beds for Men.

Notices given to secure Half-yearly Limewash- ing	95	Notices complied with 121
Notices served to secure observation of Bye- Laws—1 written, 15 verbal	16	
Notices to require nec- essary Repairs to Drains and Premises ...	9	
Notices served to require Application to be made for Registration ...	1	
Total 121		Total 121

Visits, inspecting as to fresh Applications, Measuring
Rooms, serving Notices, affixing Room Tickets and
copies of Bye-Laws, ordinary Inspections to secure
Observance of Bye-Laws, and to superintend Repairs
to Drains, &c., and making enquiries to see that Bye-
Laws are complied with, and Night Visits 546

S. DIMOND,

Inspector.

Inspection of Meat, Fish, and Slaughter Houses.

Slaughter House Bye-Laws dated 5th December, 1891.

SPECIAL INSPECTOR FIRST APPOINTED JANUARY 7TH, 1884.

Inspector—G. DENT.

The Licensed Slaughter Houses number 93, the same as last year, and have been kept under constant supervision. The Fish, Meat, and Vegetable Markets, both wholesale and retail, have, as usual, been visited daily during the year, and periodical attention paid to the Railway Stations, in order to intercept possible unsound consignments. I am more than ever convinced that the substitution of Public Abattoirs for many of the private slaughter houses now in use would prove to be of great public service.

No license has been withdrawn in consequence of any contravention of the bye-laws during the year.

2,150 head of cattle arrived in 1891 from over sea, and were slaughtered at the Docks Slaughter House, Hotwells. I am glad to say these, with the cattle lairs adjoining, are kept in good order.

Full details of the Inspectors' work are appended in tabulated form.

INSPECTION OF MEAT AND FISH.

1891.

Summary for the Year.

Cattle, Pigs, Meat, Fish and Fruit Destroyed.

Beasts	...	...	...	...	...	...	134
Sheep	...	...	...	...	...	...	59
Pigs	...	...	...	...	...	...	18
Calves	...	...	...	...	...	...	7
Meat from Butchers' Premises	...	...	...	...	...	lbs.	488
Packages of Fish	...	...	...	...	...	...	538
," Vegetables	...	...	...	...	...	...	37
," Fruit	...	...	...	...	...	...	160
," Rabbits	...	...	...	...	...	...	70
No. of Notices served during the year to abate nuisances, repair drains, provide proper tubs and vessels, &c., on failure of verbal Notice; all complied with	...	...	...	...	...	...	55

GEORGE DENT.

Inspector of Meat and Fish.

Regulation of Houses Let in Lodgings, or occupied by Members of more than one Family.

Model Bye-Laws adopted April 12th, 1889.

SPECIAL INSPECTORS APPOINTED SEPTEMBER, 1889.

THOMAS LOWTHER, *Superintendent Inspector.*

W. H. PERRY, *Inspector of Houses Let in Lodgings.*

J. T. LYONS, *Assistant Inspector of Houses Let in Lodgings.*

The work done by the Inspectors in this section of the department is really House to House Inspection, as out of 1,116 houses visited, only 102 were registered as houses let in lodgings.

The re-visiting of similar houses previously registered has more than ever shown the necessity of constant supervision of this class of dwellings, as, on account of the migratory habits of the people, the houses are rarely inhabited by the same occupants for any length of time, and in re-visiting, are often found to be in a dirty and dilapidated condition, although perhaps only a few months have elapsed since the previous visits.

It is also noteworthy that only one case of over-crowding was found during the year in the houses visited.

Houses Let in Lodgings and Court Inspection during the year.

1891.

	Houses Registered.	Courts or other Houses visited but not Registered.	TOTAL.	No. of Re-visits to inspect Work.	Total No. of Houses on Register.
No. of Houses visited, including Houses Let in Lodgings, Courts, &c.	102	1014	1116	7675	257

PARTICULARS OF 102 HOUSES REGISTERED DURING THE YEAR.

Total No. of rooms ..	687	Average number to a sleeping room ..	2·1	Houses without Co.'s water ..	0
Do. inmates	1093	Average number to			
Do. w.c.'s ..	99	one privy ...	10		

SUMMARY OF WORK DONE.

	Left on Books to Dec. 31st, 1890.	Notices served to Dec. 31st, 1891.	TOTAL.	Complied with.	Now in hand.
Verbal Requests and Notices served for the abatement of Nuisances	52	504	556	535	21

Nature of Nuisances found.	Number found.	Work secured to abate Nuisances.	Number abated.	Now in hand.	Not started.
Defective roofs, shutting, &c. ...	82	Repaired, &c. ...	72	5	5
Dirty and dilapidated staircases ...	112	Cleansed, coloured and repaired ..	111	1	...
Do. rooms	581	Do. do. do.	577	4	...
		Stoneware basins and traps fixed ..	437	7	6
Foul and defective w.e.'s or deficient w.c. accommodation	477	Do. Flushed with Co.'s water ..	12	...	...
		Closets repaired ..	11	...	...
		Additional closets ..	4	...	...
Defective drains ...	431	New drains relaid or repaired ...	423	2	6
Do. Surface and other sinks ...	511	Stoneware traps fixed and sinks disconnected ..	510	2	1
Do. Yard paving	58	Relaid or repaired ...	56	...	...
Offensive deposits ...	13	Removed ...	13	...	...
Do. Cesspools ...	...	Removed ...	...	...	...
Keeping Animals ...	...	Removed ...	...	...	...
Polluted Wells ...	5	Co's Water laid on ..	5	...	...
Houses with Infectious diseases ...	...	Houses cleansed and disinfected...	...	...	...
Overcrowding ...	1	Abated ...	1	...	...
Totals ...	2271		2232	21	18

Dairies, Cowsheds, and Milkshops.

Contagious Diseases (Animals) Acts, 1878 to 1886; Dairies, Cowsheds, and Milkshops Order, 1885; Dairies, Cowsheds and Milkshops Amendment Order, 1886.

REGULATIONS MADE UNDER THE ABOVE POWERS 9TH DECEMBER, 1890.

SPECIAL INSPECTOR OF DAIRIES, COWSHEDS, AND MILKSHOPS,
FIRST APPOINTED 19TH AUGUST, 1889.

1891.

Inspector—E. J. CASELY.

Dairies.—During the year 258 have been inspected, of these 140, or more than half, were found to be in an unsatisfactory condition, in several cases the Sanitary arrangements were found to be defective, and have been remedied. In two cases the w.c. and sinks were found in the living rooms, these have been removed and re-built in the yards. In two large Dairies, where a considerable number of workmen are employed, the Sanitary arrangements were very foul, these have been taken down, and in one case a Latrine or trough closet constructed, flushed automatically by the waste water, about 120 gallons per day, and well ventilated; in the other case a proper pan and trap fixed, provided with flushing appliances and water for flushing. 94 have been cleansed, lime-washed, &c., and 8 new Dairies built outside the dwelling-houses. 2 cases of infectious disease were notified, both being promptly removed to your Authority's Hospital, and all necessary disinfection immediately carried out.

Cowsheds.—Of the 36 Cowsheds inspected, 13 were found to be in bad condition, either from defective paving or drainage, overcrowding of cattle, impure water supply, or large accumulations of manure, and in 12 cases swine were found in or near the Cowsheds. There was, however, a decided improvement in the conditions found last year.

On Sunday, January the 18th, the Joint Railway Station, Temple Meads, was visited by the Inspector, and a note taken of all milk brought by rail, both morning and evening. Over 100 vessels were consigned to 85 purveyors or dairymen, all of whom were on subsequent enquiry found to be registered.

Milkshops.—Of the 660 Milkshops inspected, 332 were found to be in a defective condition. In several cases milk was stored in living rooms, and in one case the same room was occupied as a milkshop, bedroom, and living room, in another case, 2 families were occupying a living room used as a Milkshop ; in both of them a proper dairy has been built outside, and milk removed to same. In several cases milk was found stored in wash-houses, and in two cases on staircases used by more than one family : in 11 cases swine were kept in yards ; these have all been removed. 13 cases of overcrowding of families were found in Milkshops, and in each case the conditions have been remedied.

All Sanitary or other defects found in Dairies, Cowsheds, or Milkshops, have been effectually remedied, or are now in hand, and considerable attention has been paid to the securing of cleansing and lime-washing, and to the constant removal of manure or other objectionable deposits.

Dairies, Cowsheds, and Milkshops.

1891. SUMMARY FOR THE YEAR.

Total number of Dairies, Cowsheds, and Milkshops on Register at end of last year	...	...	824
„ number registered during this year	...	...	131
„ „ now registered	...	...	955
„ „ of inspections made	...	...	992
„ re-visits	...	...	1167
„ Notices served, written	...	...	136
„ „ given, verbal	...	...	248
„ „ complied with	...	...	<u>384</u>

A.—Particulars of Inspections—

	Dairies.	Cowsheds.	Milkshops.
Total Number inspected	258	74	660
Found in good condition	118	33	328
„ fair „	81	28	177
„ bad „	59	13	155
Impure water supply	1	5	8
W.C.'s, sinks, or drains, defective	40	10	199
W.C.'s communicating with premises	1	0	3
Cesspools	0	4	0
Yards badly paved, yard gratings defective	31	6	141
Dairy or Milkshop used for purposes incompatible with proper preservation of the milk	11		103
Dirty milk vessels	11	0	47
Infectious disease amongst employés or on premises	5	2	16
Swine on premises	0	12	11
Cowsheds with defective lighting, cleansing, ventilation, or air space	0	16	0
Cowsheds with diseased cattle	0	0	0
Leaky Roofs	9	7	34
Families overcrowded	5	0	13
Cowsheds overcrowded	0	12	0
Deposits of Manure	8	13	23

1891. B.—Particulars of Work secured.

Dairies, Cowsheds, and Milkshops—

New drains laid entirely ...	...	...	41
Drains partly relaid ...	...	...	116
New W.C. pans and traps fixed ...	...	...	121
W.C.'s ventilated and provided with flushing apparatus ...	...	...	47
W.C.'s cleansed ...	...	...	81
Sinks trapped ...	...	...	145
Yard gratings trapped ...	...	...	161
Yards paved ...	...	...	90
Yards and kitchens limewashed ...	...	...	109
Cesspools abolished and drainage provided ..			4
Pigs removed ...	...	...	23
Cowsheds cleansed, limewashed, drained, and ventilated ...	...	...	19
Stables at milkshops drained and ventilated ...			19
Company's water laid on at milkshops ...			21
Polluted wells closed at ditto ...	...	...	2
Milkshops and dairies cleansed, limewashed, &c.			104
New dairies built outside dwelling-houses ...			8
Number of persons discontinued sale of milk, (milk kept in paraffin stores, marine stores, in living room, &c.) ...	...	...	115
Smoke test applied to drains ...	...	...	47
Leaky roofs repaired ...	...	...	42
Disinfection carried out ...	...	...	21
Cows removed ...	...	...	9
Cowsheds enlarged ...	...	...	5
Families removed ..	...	...	13
Deposits of Manure removed ...	...	...	44

Details of House to House Inspections in connection with the better control of Houses of the Working Classes.

1891.

Inspectors— { H. J. KIRLEY, *Assis. District Inspector.*
 { J. F. COTTY, " "

Total No. of Houses inspected	...	...	901
No. of Houses found in good repair	...	...	278
Ditto do. fair do.	...	...	509
Ditto do. bad do.	...	...	119
No. of Houses with good Sanitary arrangements	...	...	124
Ditto fair do.	...	...	282
Ditto bad do.	...	...	495

	Left on Books to Dec. 31, 1890.	Notices served during year.	Total.	Complied with.	Now in hand or running.
No. of verbal requests and Written Notices served to abate Nui- sances	84	497	581	374	7

SUMMARY OF WORK COMPLETED.

Drains re-laid	...	...	...	...	77
Drains partially re-laid	...	...	...	...	279
W.C.'s fitted with new pans and traps	...	...	...	...	496
W.C.'s cleansed and amended	...	...	...	...	65
Surface gratings trapped and sinks disconnected	...	...	...	...	550
Back yards paved	...	...	...	...	132
Roofs and rain-water shuting repaired	...	...	...	...	79
Dirty and dilapidated houses cleansed and repaired	...	...	...	...	119
No. of re-visits to inspect work in hand...	...	...	...	...	5,013

This work has been greatly interfered with during the year in consequence of the two Assistant Inspectors having to make so many of the enquiries necessitated by the working of the Infectious Diseases (Notification) Act.

**Particulars of Cases taken before the Justices
during the year.**

1891.

DATE.	NAME.	OFFENCE.	RESULT.
Jan. 30th	S. Phillips	House unfit for human habitation, 49 Great Ann Street	Closing Order made with costs.
,,	A. G. Groves	Houses unfit for human habitation, 2 and 3 Rock Court, near Durdham Down	Do.
,,	A. G. Groves	Two houses unfit for human habitation in Butter Alley, Old Bread Street	Do.
,,	C. Winstone	One house unfit for human habitation in Butter Alley, Old Bread Street	Do.
,,	J. Cains	Two houses unfit for human habitation in Bragg's Lane, St. Jude's	Do.
,,	Grindell and Kent	One house unfit for human habitation in St. George's Road, St. Augustine's	Do
Mar. 25th	C. Page	One house unfit for human habitation in Page's Court, West Street, Bedminster	Do.
,,	W. Page	One house unfit for human habitation in Page's Court, West Street, Bedminster	Do.
,,	J. Page	One house unfit for human habitation in Page's Court, West Street, Bedminster	Do.
,,	M. A. Hudson	One house unfit for human habitation in Jones's Lane, Redcliff Hill	Fined £1 and costs, and house closed till made habitable
..	E. S. Grigg	Four houses unfit for human habitation in Grafton Street, St. Philip's Marsh	Fined £1 and costs for each house, and to close the houses till made habitable
July 31st	E. Cousins	Five houses unfit for human habitation in Whipperton Court, St. Jude's	Closing Order made
,,	J. Moody	One house unfit for human habitation in Bear Yard, Hotwells	Closing Order made with costs
,,	J. Dunn	Nuisance from defective w.c., sinks, and drain, at 1 and 2 Little George Street, St. Jude's	Case withdrawn on payment of costs. Work done before the day of hearing

PARTICULARS OF CASES—*continued.*

DATE.	NAME.	OFFENCE.	RESULT.
July 31st	J. Griffen	For exposing for sale in the Bristol Cattle Market three sheep unfit for food ...	Fined £3 and costs
	L. Twining	For not removing manure from Stables at Thorndale Mews, Clifton, according to regulations ...	Fined £1 and costs
	H. Rains	For not removing manure from Stables at Thorndale Mews, Clifton, according to regulations ...	Fined 10/- and costs
Aug. 7th	T. Totterdell	For having in his Licensed Slaughter House, Bedminster, a Diseased Heifer unfit for the food of man ...	Pleaded guilty, and fined 40/- and costs
		Four houses unfit for human habitation at New Margaret Place, Bedminster ...	Ordered to close the houses till made habitable, and to pay costs
Nov. 13th	H. Courtenay	For not removing manure from his stables at Stapleton Road, according to regulations ...	Fined 10/- and costs
	H. Russell	Nuisance from defective w.c.'s and sinks at Victoria Place, Lawrence Hill ...	Ordered to abate the nuisance and to pay costs
	A. C. Virgin	Nuisance from defective w.c. at 43 Great Ann Street, St. Jude's	Do.
,,	J. Davis	Nuisance from defective w.c. at 5 Lower Gay Street, St. James'	Do.
	T. Hall	Nuisance from defective w.c. at 272 Stapleton Road, and 2, 4, 6, and 10 Stratford Street, Barrow Lane ...	Do.
,,	G. Cunningham	Nuisance from defective w.c.'s at three houses in Lincoln Street, Barton Hill	Do.
	W. Illes	Nuisance from defective w.c.'s at three houses in Lincoln Street, Barton Hill	Costs not asked for

1891.

Baths and Wash Houses.

The three establishments at
 The Weir,
 The Mayor's Paddock, New Cut,
 Jacob's Wells,
 return the following figures as the year's work :—

	No. of Bathers. Swimming Baths.	Private Baths.	Women Washing Clothes.
The Weir	15,712	43,905	31,835
The Mayor's Paddock, New Cut.	12,600	27,183	21,554
Jacob's Wells (Baths only).	29,131	18,729	...

*The City Analyst, Mr. F. Wallis Stoddart, has kindly supplied
the following returns :—*

“ FOOD AND DRUGS ACT.”

SUMMARY OF RETURNS FOR 1891.

Articles.			Analysed.	Condemned.
Milk	...	...	189	14
Pepper	...	...	32	...
Bread	...	...	3	...
Butter	...	...	33	6
Cheese	...	...	1	...
Mustard	...	...	21	4
Lard	...	...	14	...
Margarine	...	...	3	...
Confectionery	...	...	3	...
Oatmeal	...	...	3	...
Arrowroot	...	...	2	...
Cornflour	...	...	1	...
Tapioca	...	...	1	...
Total			306	24

F. WALLIS STODDART,

Public Analyst.

PART III.

VITAL AND MORTAL STATISTICS.

The estimated population of the Bristol Urban Sanitary District, for the middle of 1891, based upon the Census enumeration of April, 1891, is 222,049, the Acreage is 4,538 (Ordnance Calculation), with a mean density of 48.9 persons per acre.

The population of the City has, for the last few years, been considerably over-estimated, owing to the fact that the population has not increased at so great a rate during the last intercensal period (1881-1891) as it did during the previous intercensal period (1871-1881). The consequent error amounted in 1891 to as much as 10,199, and as a result the birth and mortality rates have for some years appeared lower than was actually the case. For example, whereas the recorded birth and death-rates for 1891 are 30.29 and 20.8 respectively, these rates calculated upon the incorrect estimate would have appeared to be 28.95 and 19.94.

All figures in this Report have been revised upon the recent Census enumeration.

This table shows the acreage and number of persons per acre for each of the Registration Sub-Districts.

Table A.
Showing Population, Acreage, and Number of Persons per Acre (Density) in each of the Registration Sub-Districts of the Bristol Urban Sanitary District, at the Census of 1881, and for the middle of 1891.

Registration Sub-Districts.	Acreage.	POPULATION.			
		Census, 1881.	1881, Density.	Estimated to middle of 1891 on recent Census	1891 Density.
St. Mary Redcliff	170	9,602	56.4	9,287	54.6
Castle Precincts	119	6,768	56.8	5,558	46.7
St. Paul	148	18,643	125.9	19,046	128.6
St. James	68	8,420	123.8	7,817	114.9
St. Augustine	250	14,066	56.2	13,788	55.1
Bedminster	992	37,741	38.0	45,812	46.1
Clifton	921	28,702	31.1	29,361	31.8
Ashley	434	19,106	44.0	24,190	55.7
St. Philip	744	50,108	67.3	51,650	69.6
Westbury	692	13,347	19.2	15,540	22.4
Bristol Urban Sanitary District	Total	4,538*	206,503	45.5	222,049
					48.93

* Ordnance Calculation.

Births.

The births registered in Bristol in 1891 were 6,725, of which 198 were returned as illegitimate.

The birth rate for the year, 30.29 is lower (with the exception of 1890) than at any time during the last 14 years; the rate has since 1881 shown an almost continuous decrease, interrupted by a slight rise in 1889, and again in 1891 (Table B). The rate for the 28 great towns in 1891 was 32.6.

The excess of births over deaths during the year 1891 (*natural increase of population*) is 2,094. The estimated *actual increase* from 1890 amounts to 1607.

Marriages.

2,587 Marriages took place within the Borough of Bristol during 1891, viz., 937 in the Bristol Union, 1,305 in the Barton Regis Union, and 345 in the Bedminster Union divisions of the Borough. The annual rate per 1,000 living is thus 11·6, compared with 11·9, the rate of 1890.

Deaths.

4,631 Deaths were registered in the District during the 52 weeks ending 2nd January, 1892, of which 52, or 1·1 per cent. were returned as deaths of illegitimate children. The general death rate for the year, uncorrected for age and sex distribution, is 20·85 per 1,000 living.

Infant Mortality.

Of the 4,631 Deaths 972 were of infants under one year. The proportion of these deaths to every 1,000 births (Infant death rate) was 144·5.

This rate varied thus:—200·5 in Redcliff, 182·4 in Castle Precincts, 175·5 in St. James, 164·8 in Bedminster, 159·1 in St. Augustine, 138·7 in St. Philip, 136·1 in St. Paul, 108·1 in Ashley, 105·7 in Clifton, and 85·9 in Westbury.

In Table **B** will be seen the annual infant rates in Bristol for the past 15 years. During 1891 the infant mortality ranged in the 28 large towns from 227 in Preston, 214 in Leicester, and 204 in Blackburn to 142 in Derby, 139 in Portsmouth, and 137 in Brighton.

Mortality at Ages between 1 and 60.

2,288 Deaths were returned between these ages corresponding to an annual rate of mortality per 1,000 living between these ages of 11·4. The rate for the 28 great towns between these ages was 12·7.

Mortality amongst Aged People.

1,371 Deaths of persons aged 60 and upwards were registered, whose ages averaged 72 years and 5 months. This number is

somewhat in excess of last year, and the average age at death is four months less. The rate of mortality amongst persons living at these ages was in Bristol 88.9, and for the 28 great towns was 91.3.

Vaccination—Pauperism.

I am indebted to Mr. J. J. Simpson, Clerk to the Guardians of the Bristol Incorporation, for the following information :—

Vaccination. The most recent available return as to Vaccination is that for 1890, from which it appears that the 1,571 children registered as born during the year, are accounted for as follows :—

Number successfully Vaccinated,	1,262	1,571.
Insusceptible	... ... ... 3
Died unvaccinated	... ... 169
Postponed by Medical Certificate	29	
Removed to Districts, the Vaccination Officer of which has been duly apprised	... ... 13
Cases left and not traceable	... 85	
In abeyance	... ... 10

The percentage of children successfully vaccinated out of the total number of births, is 80.33 ; and the per centage of deaths of unvaccinated children is 10.75.

Comparing these results with the latest available return for the whole of England and Wales—that for 1888,—we find that the percentage of the successfully vaccinated was for that year in England and Wales, 81.7, and the percentage of deaths of unvaccinated children, 9.5.

The most recent statement as to Vaccination in 1891 is obtained from the account of fees paid to the Vaccination Officer for registering certificates of successful vaccination received by him during the year. The number of certificates so received by him and registered in 1891, was 1,294 ; but these figures are subject to correction on account of children who, though registered as successfully vaccinated during the year, may have been born in 1890, or in some previous year.

The number ascertained in the same manner for 1890 was 1,299.

Pauperism Influenza certainly had some effect on the Pauperism of 1891, although it is not probable that very much of the increased cost can be attributed to this disease.

The cost of relief during the year to Lady-day, 1892, exceeded the cost in the previous year by £897, viz. :—

Increase in cost of maintaining Indoor poor,	£666
" ", Outdoor relief	150
Increase in cost of maintaining Lunatics in the Borough Asylum	... ... 81

As regards the indoor poor, the increased cost is principally in the prices paid for provisions and other articles, viz. :—flour, meal, butter, milk, water, gas, and coal : the increase in respect of coal alone being £170. The lowest number of indoor poor in any week in the year was 869, and the highest number 999.

With regard to the out-relief class, the increase of £150 is, I think, principally due to an increase made by the Guardians during the year in the scale of relief to children of widows, and to some extent, perhaps, to the sickness caused by Influenza. The lowest number of out-door poor in any week in the year, was 1,729, and the highest number 1,932.

The increase in the cost of Lunatics is due to the charge for maintenance in the Lunatic Asylum having been increased by the Visiting Committee of the Asylum in the early part of the year, from 10/- to 10/6 per week.

Table showing Diminution or Excess of Deaths in 1891, compared with Annual Deaths in 1881-90.

CORRECTED FOR INCREASE OF POPULATION.

Cause of Death.	Diminution in 1891.	Excess in 1891.
Small Pox	6	—
Measles	—	136
Scarlet Fever	39	—
Typhus	2	—
Influenza	—	85
Whooping Cough	59	—
Diphtheria	2	—
Enteric Fever	10	—
Diarrhoeal Diseases	47	—
Cancer	—	46
Phthisis	11	—
Premature Birth	—	14
Diseases of Nervous System ...	—	175
Do. Circulatory System ...	—	115
Do. Respiratory System ...	—	277
Do. Urinary System ...	—	6
Childbirth and Puerperal Fever ...	—	1
Violence	—	9
All Other Causes	325	—
	501	864
Balance of Diminution and Excess	—	363

This table shows, in a summary form, the amount of life saved and the amount lost in the year 1891, as compared with the preceding decennium, under each of the more important headings in the list of causes.

The net loss in the year amounted to 363 lives, that is to say, had the death-rate in the year been only equal to the average in the preceding decennium, 363 fewer persons would have died in Bristol than was actually the case.

As the Registrar-General has pointed out in the case of London, the excess shown under certain headings, such as Cancer, Premature Birth, Diseases of the Circulatory System and of the Urinary Organs, appears to be part of a general tendency to increase under these headings, which has been noticed for some years past. Bristol differs, however, from London and from the

great towns generally, in showing rather a tendency to decrease in Diphtheria as a cause of death.

But under certain of the other headings, the observed increase is attributable to temporary causes, and among them the most notable are (1)—Measles, in which much of the excess is due to the very severe epidemic in Bedminster in the spring of the year : and (2)—Influenza, with which must be taken the considerable excess shown under diseases of the Respiratory System ; for there is little doubt that a considerable part of the increase, and probably also some of that under diseases of the Circulatory and Nervous Systems, was in reality determined by the same cause as were the deaths directly attributed to Influenza ; and the validity of this assumption is supported by the synchronous rise in mortality from these diseases, particularly from those of the Respiratory System, accompanying each outbreak, and especially the winter outbreaks of Influenza.

Each of the other principal Zymotic Diseases shows a satisfactory decrease upon the decennial averages.

The following table shows the increase or decrease in the **Death Rate** in Bristol and in the 28 Towns from **all causes**, and from the **Principal Zymotic Diseases** in 1891, as compared with the previous ten years, 1881—90.

BRISTOL.			28 GREAT TOWNS.		
Cause of Death.	Ten years, 1881-90.	1891.	Cause of Death.	Ten years, 1881-90.	1891.
All Causes ...	19.3	20.9	All Causes ...	21.6	22.5
Small Pox ...	0.03	0.00*	Small Pox ...	0.09	0.00
Measles ...	0.47	1.09	Measles ...	0.63	0.52
Scarlet Fever	0.35	0.17	Scarlet Fever	0.41	0.18
Diphtheria ...	0.09	0.06	Diphtheria ...	0.19	0.21
Whooping Cough ...	0.51	0.24	Whooping Cough ...	0.61	0.64
Fever ...	0.17	0.10	Fever ...	0.26	0.20
Diarrhoea ...	0.50	0.30	Diarrhoea ...	0.89	0.67
Deaths under 1 year to 1000 births	142	146	Deaths under 1 year to 1000 Births	162	167

* 0.00 indicates that the deaths were too few to give a rate of 0.005.

COMPARATIVE TABLE—Showing the Estimated Population, Density, Birth-rate, Death-rate, Zymotic-rate, and Infantile Death-rate of the TEN LARGEST TOWNS OF ENGLAND AND WALES (those having a population of over 200,000); also of EDINBURGH, GLASGOW, DUBLIN, and CARDIFF, for the Year 1891, compared with the same particulars and rates for the group of 28 large towns.

	Estimated Population, middle of 1891.*	Persons to an acre.	Birth-rate.	Death-rate.	Zymotic-rate.	Deaths under 1 year to 1000 Births.
28 Large Towns	9,405,108	36.3	32.6	22.5	2.42	167
London ...	4,221,452	56.5	31.8	21.4	2.30	154
Liverpool ...	517,116	99.3	34.6	27.0	2.73	188
Manchester ...	506,469	39.6	34.1	26.5	3.13	192
Birmingham ...	429,906	51.2	34.2	22.2	2.15	171
Leeds ...	369,099	17.1	34.1	22.9	2.41	177
Sheffield ...	352,304	16.6	36.6	23.9	2.66	170
Bristol ...	222,049	47.9	30.4	20.9	1.96	146
Bradford ...	216,938	20.1	38.7	22.2	2.44	181
Nottingham ...	212,662	21.4	29.9	19.9	2.26	169
Hull ...	200,934	25.4	34.6	21.0	1.72	172
Edinburgh ...	261,970	44.4	28.1	21.6	1.84	137
Glasgow ...	567,143	92.8	35.0	25.3	3.23	149
Dublin ...	357,050	14.4	28.4	26.5	1.73	168
Cardiff ...	130,283	17.7	36.5	22.1	2.09	153

* These Populations are based on the 1891 Census returns.

COMPARATIVE MORTALITY IN THE GREAT TOWNS IN 1891.

(*Registrar-General's Returns*).

The twenty-eight great Towns of England and Wales contained an estimated population of 9,405,108 persons in the middle of the year.

The *Births* registered in the course of the 52 weeks ending on 2nd January, 1892, were in the proportion of 32.6 per 1000 persons living, the average rate in the preceding nine years having been 33.9.

The *Deaths* registered in the 52 weeks gave an annual rate of 22.5 per 1000, the average having been 21.5 in the nine next preceding years.

The *Death-rate* varied greatly in the different towns, ranging from 18.2 in Brighton; 19.0 in Portsmouth; 19.1 in Derby; 19.3 in Norwich; 19.9 in Nottingham; and **20.9** in **Bristol** and Birkenhead; to 26.0 in Salford; 26.5 in Manchester; 27.0 in Liverpool; and 27.3 in Preston. These rates are uncorrected for differences in age and sex distribution, as the detailed results of the 1891 Census are not yet available.

There were in all only 18 deaths from *Small-pox*, of which 8 were recorded in London and the Metropolitan Asylum Hospital Ship; 7 in Birmingham; 2 in Liverpool; and 1 in Leeds. *Measles, Scarlet Fever, Fever, and Diarrhœa*, all showed considerable declines; while under *Whooping Cough* and *Diphtheria*, there were slight increases above the averages of the ten preceding years.

The mortality from *Measles* was 0·52 per 1000, the average rate in the ten preceding years having been 0·63, but varied from 0·25 in Brighton and in Birmingham, to **1·09** in **Bristol**; 1·12 in Huddersfield; 1·15 in Sunderland; 1·37 in Portsmouth, and 1·48 in Blackburn.

The mortality from *Scarlet Fever*, which had averaged 0·41 per 1000 in 1881—90, in 1891 was only 0·18, but varied from 0·01 in Brighton; 0·06 in Portsmouth and in Birkenhead; and 0·07 in Norwich, to 0·45 in Halifax; and 0·66 in Bradford. The rate in **Bristol** was **0·17**.

The mortality from *Diphtheria* rose from an average of 0·19 in 1881—90, to 0·21 in 1891, but varied from 0·00 in Blackburn; 0·02 in Halifax; 0·04 in Leeds; 0·05 in Wolverhampton; and **0·06** in **Bristol**, to 0·32 in London; and 0·38 in Salford.

The mortality from *Whooping Cough*, which in 1881—90 had averaged 0·61 per 1000, rose in 1891 to 0·64, ranging from 0·17 in Hull; 0·18 in Brighton; 0·23 in Portsmouth; and **0·24** in **Bristol**, to 0·96 in Leicester; 0·99 in Newcastle-on-Tyne; and 1·03 in Manchester.

The mortality from *Continued Fevers* fell from 0·26 in 1881—90, to 0·20 in 1891, ranging from **0·10** in **Bristol**, and 0·11 in Brighton, to 0·38 in Salford; 0·37 in Manchester; 0·40 in Sunderland; and 0·47 in Birkenhead.

The mortality from *Diarrhœa*, which had averaged 0·89 per 1000 in 1881—90, fell to 0·67 in 1891, but ranged from 0·11 in Huddersfield; 0·12 in Halifax; and **0·30** in **Bristol**, to 1·18 in Wolverhampton; 1·45 in Leicester; and 1·95 in Preston.

The highest rates from these *Seven Zymotic Diseases* in the aggregate were 3·41 in Blackburn; 3·45 in Leicester; 3·46 in Salford; and 3·77 in Preston; while the lowest were 1·05 in Brighton, and 1·44 in Derby.

The *Infantile Death-rate*, or proportion of deaths of infants in the first year of life to 1000 registered births, was 167 in the

twenty-eight towns, ranging from 137 in Brighton ; 139 in Portsmouth ; 142 in Derby ; **146** in **Bristol** ; 148 in Birkenhead ; and 158 in Cardiff, to 204 in Blackburn ; 214 in Leicester ; and 227 in Preston.

Health of Foreign Cities—1891.

IN TWENTY-TWO EUROPEAN CITIES, the lowest *Death-rates* were 19.5 in the Hague and in Dresden : and 19.8 in Christiania ; while the highest were 29.2 in Breslau ; 30.5 in Trieste ; and 37.6 in Moscow. The rate was 20.9 in Berlin ; 21.6 in Paris ; and 24.5 in Vienna, against 21.4 in London.

Small-pox caused 451 deaths in Vienna, 335 in Brussels, 127 in Prague, and 105 in Moscow. The mortality from *Measles* showed excess in Brussels, Amsterdam, Stockholm, Vienna, and Rome : from *Scarlet Fever*, in Stockholm, Moscow, Prague, and Buda-Pesth : from *Diphtheria*, in all the twenty-two European Cities ; except Brussels, Rotterdam, and the Hague. From *Whooping Cough*, in Amsterdam ; and from *Fever*, in Moscow and in Rome (the fever in Rome being mostly of the malarial type).

The mortality from *Diarrhoeal Diseases* was especially heavy in Brussels, Moscow, Berlin, Hamburg, Breslau, Munich, Buda-Pesth, and Venice.

In Cairo and Alexandria the death rates were 53.7 and 45.4 respectively ; the excess in both towns being largely due to *Fever* and *Diarrhoeal Diseases*, and in the case of Cairo, to *Measles*.

Among the INDIAN CITIES Madras has the highest *Death-rate*, 52.5 : the rate in Bombay and Calcutta being 29.0 and 27.9 respectively. *Small-pox* caused 125 deaths in Bombay, 70 in Madras, and 15 in Calcutta. The mortality from *Fever* was, as usual, high in these cities.

Among the AMERICAN CITIES the *Death-rates* ranged from 21.5 in Philadelphia to 26.0 in New York. The mortality from *Diphtheria* and *Diarrhoeal Diseases* was excessive in all these cities, and that from *Scarlet Fever* in New York and Brooklyn, and from *Fever* in Philadelphia.

Table B. Showing Population, Births, Marriages, and Deaths, and Birth and Death Rates, in Bristol, for the 15 Years, 1877-1891.

Estimated Population.	Registered Births.	* Marriages in the District of the Bristol Union.	DEATHS.				ANNUAL RATES.			
			Total Deaths at all Ages.	Under 1 Year.	Over 1 and under 5.	Over 60.	Birth Rate per 1000.	Death Rate per 1000.	Infantile Mortality to 1000 Births.	Zymotic Rate.
1877 202,950	7,295	1,199	4,415	1,120	785	990	653	21.8	153.5	3.3
1878 206,419	7,236	1,159	4,409	1,145	605	1,121	631	21.4	158.2	2.0
1879 209,947	7,644	1,115	4,496	1,112	715	1,163	607	36.4	145.4	2.2
1880 213,563	7,193	1,195	4,276	1,040	759	1,036	661	33.7	144.5	3.0
1881 {Census} {206,503}	7,121	1,103	4,050	900	608	1,084	650	34.4	19.6	126.3
1882 208,007	6,935	1,107	4,019	988	589	1,045	624	33.3	19.3	142.0
1883 209,522	6,844	1,073	3,795	917	405	1,057	608	32.6	18.1	133.9
1884 211,048	6,888	1,090	4,023	1,001	538	1,061	653	32.6	19.0	145.3
1885 212,586	6,786	974	4,281	1,052	639	1,134	629	31.9	20.1	155.0
1886 214,134	6,724	949	4,253	1,002	619	1,132	694	31.4	19.8	149.1
1887 215,624	6,619	956	4,542	996	1,244	680	30.6	21.0	150.4	3.0
1888 217,266	6,608	981	3,816	824	432	1,138	710	30.4	17.5	124.6
1889 218,848	6,694	932	4,021	976	595	1,062	660	30.5	18.3	145.8
1890 220,442	6,634	1,033	4,532	991	597	1,265	730	30.0	20.5	149.4
1891 222,049	6,725	937	4,631	972	603	1,371	815	20.8	1,445	1.7

* This includes the Registration Sub-Districts of St. Mary Redcliff, Castle Precincts, St. Paul, St. James, and St. Augustine only.

Table C. Showing Number of Deaths from Zymotic Diseases in Bristol, during the 16 years, 1876–1891.

	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
Small Pox	23	...	...	...	1	...	...	...	...	10	8	13	26	...	...	1†
Diphtheria	11	4	5	4	6	10	8	13	19	25	28	23	26	15	16	16
Erysipelas	14	17	12	13	10	18	14	10	11	10	11	10	21	16	9	12
Scarlet Fever	286	45	36	92	244	153	75	33	37	21	89	217	45	26	40	37
Typhus	5	31	2	...	...	7	10	1	2	...	...	...	...	...	1	...
Enteric Fever	84	101	89	42	39	52	38	29	40	16	29	23	28	38	33	23
Puerperal Fever*	...	...	...	...	...	...	...	...	...	18	12	8	9	17	11	12
Measles	77	133	53	74	73	120	54	33	46	159	101	147	61	185	92	239
Whooping Cough	47	239	66	174	95	35	196	38	99	149	101	124	38	105	201	53
Diarrhoea	209	117	171	70	184	82	104	83	132	89	119	117	68	131	96	58

* Previous to 1884, Puerperal Fever was not separated in the Local returns from Puerperal Diseases generally.

† This death occurred in a Hospital outside the City, and so does not appear in the General Returns.

City of Bristol.

TABLE SHOWING DEATHS REGISTERED FROM SPECIFIED CAUSES AT ALL AGES AND AT SIX GROUPS OF AGES, DURING THE YEAR 1891.

Classes.	Causes of Death.	Deaths at certain Age Groups.						All Ages.			Rate per 1000 Living.
		0 to 1	1 to 5	5 to 15	15 to 25	25 to 60	60 upwards.	M.	F.	Total.	
	ALL CAUSES	972	603	195	224	1267	1370	2279	2352	4631	20.85
I.	Small Pox { Vaccinated	...	...	...	...	...	...	...	...	...	...
	Un-Vaccinated	...	...	...	...	...	...	...	...	...	...
	No Statement	...	...	...	...	...	...	...	...	...	...
	Scarlet Fever	...	1	28	7	1	...	22	15	37	.16
	Diphtheria, Membranous Croup	3	10	3	...	...	...	8	8	16	.07
	Typhus Fever	...	...	...	...	...	...	...	...	...	...
	Enteric or Typhoid Fever	...	1	1	3	7	9	2	9	14	.10
	Continued Fever, Ill-defined Fever	...	...	...	...	...	...	...	...	...	...
	Relapsing Fever	...	...	...	...	...	...	...	...	...	...
	Puerperal Fever	...	...	...	...	1	6	...	...	7	7
	Cholera (Asiatic)	...	...	...	...	...	...	...	...	...	...
	Erysipelas	...	3	...	...	6	3	7	5	12	.05
	Measles	...	56	173	9	1	...	120	119	239	1.07
	Whooping Cough	...	15	37	1	...	...	24	29	53	.23
	Influenza	...	4	5	4	6	25	46	47	90	.40
	Simple Cholera, Chol: Diarrhoea	...	...	...	...	...	...	...	...	...	...
	Diarrhoea, Dysentery	...	35	13	4	...	2	4	35	23	.58
	Venereal Affections	...	14	...	...	1	5	...	11	9	.20
	Pyæmia	...	2	...	...	...	1	...	1	2	3
	Cow Pox, Effects of Vaccination	...	...	...	...	...	...	...	...	...	...
	Other Specific Febrile or Zymotic Diseases	...	...	...	...	...	3	1	2	2	4
II.	Parasitic Diseases	...	...	...	...	...	...	1	1	...	1
III.	Dietic Diseases, Alcholism	...	...	...	...	...	9	1	6	4	10
	Rheumatic Fever	...	...	...	2	2	5	2	5	6	11
	Rickets	...	2	7	...	...	...	6	3	9	...
	Cancer, Malignant Disease	...	...	...	3	91	74	58	110	168	.75
IV.	Tabes Mesenterica	...	23	6	...	...	...	15	14	29	...
	Tubercular Meningitis, Hydrocephalus	...	18	20	14	2	1	...	30	25	55
	Phthisis Pulmonalis	...	9	12	23	77	247	14	182	200	382
	Seroful. Tuberculosis	...	11	11	13	7	10	1	32	21	53
	Other Constitutional Diseases	...	1	...	1	2	19	19	22	20	42
V.	Premature Birth	...	124	...	...	...	...	69	55	124	...
	Congenital Malformations	...	15	2	...	...	2	257	98	161	259
	Old Age	...	...	...	...	...	...	...	...	...	1.16
	Inflam : of Brain and Membranes	11	11	8	6	33	23	39	53	92	...
	Apoplexy, Paralysis	...	1	...	1	4	82	169	115	142	257
	Epilepsy	...	...	...	2	3	10	3	11	7	.18
	Convulsions	...	97	24	2	1	...	2	68	58	126
	Other Diseases of Nervous System	1	2	6	8	17	20	28	26	54	...
	Diseases of Heart and Circulation	10	4	8	25	183	200	176	254	430	1.93
	Croup	...	1	3	...	...	...	2	2	4	...
VI.	Bronchitis	...	150	109	14	3	113	272	315	346	661
	Pneumonia	...	58	65	16	12	93	61	163	142	305
	Other Respiratory Diseases	...	12	12	4	2	34	28	42	50	92
	Dentition	...	24	11	...	...	...	21	14	35	...
	Dis : of Stomach and Intestines, Peritonitis	...	20	4	9	6	24	24	46	41	87
	Cirrhosis and other Dis : of Liver	...	...	...	...	...	34	19	25	28	53
	Other Diseases of Digestive System	8	1	1	4	17	9	16	24	40	...
	Diseases of Urinary Organs	5	4	4	3	60	55	86	45	131	0.58
	Diseases of Reproductive Organs	...	1	...	13	19	3	1	35	36	...
	Other Local Diseases	...	2	1	4	2	13	5	15	12	27
VII.	Accident, Negligence	...	5	19	21	12	53	24	99	35	134
	Suffocation	...	1	...	...	...	...	...	1	...	1
	Homicide	...	1	...	1	...	2	...	3	1	4
	Suicide	...	...	...	...	3	9	5	12	5	17
	Execution	...	...	...	...	...	...	...	...	...	...
VIII.	Marasmus, Atrophy, Debility	167	6	3	...	6	4	107	79	186	1.37
	Other Ill-defined Causes	61	1	7	9	22	19	71	48	119	...

Infectious Disease (Notification) Act, 1889.

Notifications received in each week of 1891.

(UNCORRECTED.)

Weeks.	TOTAL.		Small Pox.	Diphtheria, Membranous Group.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Continued Fever.	Puerperal Fever.
1	35			2	7	22		4		
2	114		1	1	5	104		4		
3	43					38		3		
4	38		1	2		28		4		
5	31				3	26		1		
6	29				5	24				
7	15			2	3	11		1		
8	22			1	6	13		1		
9	21			5	5	9		1		
10	15				1	8		6		
11	13		1		5	4		2		
12	10				4	5			1	
13	18			3	3	10		2		
14	13		1	1	1	9		5		
15	20			1	2	12		3		
16	19					15		3		
17	20				1	14			1	
18	18		1	1	3	9		3		
19	18				4	11		2		
20	20		1	3	5	9		2		
21	28				2	22				1
22	31			4	1	24			1	1
23	12			2	2	7				
24	30	6		5		16		1		
25	17	1		1		10		1		
26	15	2				10		2		
27	20	1				17		1		
28	11		1	2	1	9				
29	17			2	2	13				
30	17		1	1		11		5		
31	17				2	13		1		
32	10				2	6		1		1
33	14			1	1	4			1	
34	18					17		1		
35	21				1	8		11		
36	26				3	19		4		
37	18				5	11		2		
38	20				4	14		2		
39	30				5	22		3		
40	26				2	19		3		
41	17			1	1	12		3		
42	21			2	3	13		3		
43	27			3	3	17		4		
44	35			1	4	28		2		
45	38			1	7	27		2		
46	34			1	2	30		1		
47	30	1		3	2	24				
48	25			3	3	16		3		
49	37			4	2	28		2		
50	25			1	3	20		1		
51	17			1	3	12		1		
52	37			2		32		3		
	1273	18	71	135	912	1	117	8	11	

Infectious Disease Notification Act, 1889.**1891.** Notifications received during each Quarter of 1891.**Table A.**

(UNCORRECTED.)

NOTIFIABLE DISEASE.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals of each Disease.
Small Pox ...	2	14	1	1	18
Diphtheria, Membranous Croup ...	18	21	7	25	71
Erysipelas	48	26	26	35	135
Scarlet Fever or Scarletina	302	168	164	278	912
Typhus Fever ...	1	...	...	...	1
Enteric or Typhoid Fever	27	25	37	28	117
Relapsing Fever ...	...	...	...	...	...
Continued Fever ...	2	5	1	...	8
Puerperal Fever ...	3	3	3	2	11
Totals in each Quarter...	403	262	239	369	1273

Table B. Notification and Deaths registered by Sub-Districts during the year 1891.
(CORRECTED.)

	Small Pox.	Cholera.	Diphtheria, Membranous Croup.	Erysipelas.	Scarlatina or Scarlet Fever		The Fevers known as			Total cases in each Sub- District.
					Cases	Deaths	TYPHUS.	TYPHOID	ENTERIC	
St. Mary Redcliff ...			4	4	19					43
Castle Precincts ...			5	3	12					17
St. Paul ...			5	2	56	4				84
St. James ...			1	2	27	2				34
St. Augustine ...			4	5	1	81	7			97
Bedminster ...			7	3	26	4	158	4	29	233
Clifton ...			9	9	187	8				220
Ashley ...			12	1	96	4				125
St. Philip ...			12	5	52	2	168	4	25	266
Westbury ...			14	2	11	1	80	2	6	112
Extra Municipal Insts. ...							4			
Admitted to Public Insts. from outside of Rorong	3				1	1	2			1
Total cases of each disease	16				70	135	888			14
Total deaths from each disease					1	16	37			1245
Percentage of deaths to known cases ...	6.2				22.8	8.1	4.1			96
							19.6			63.6
								0		

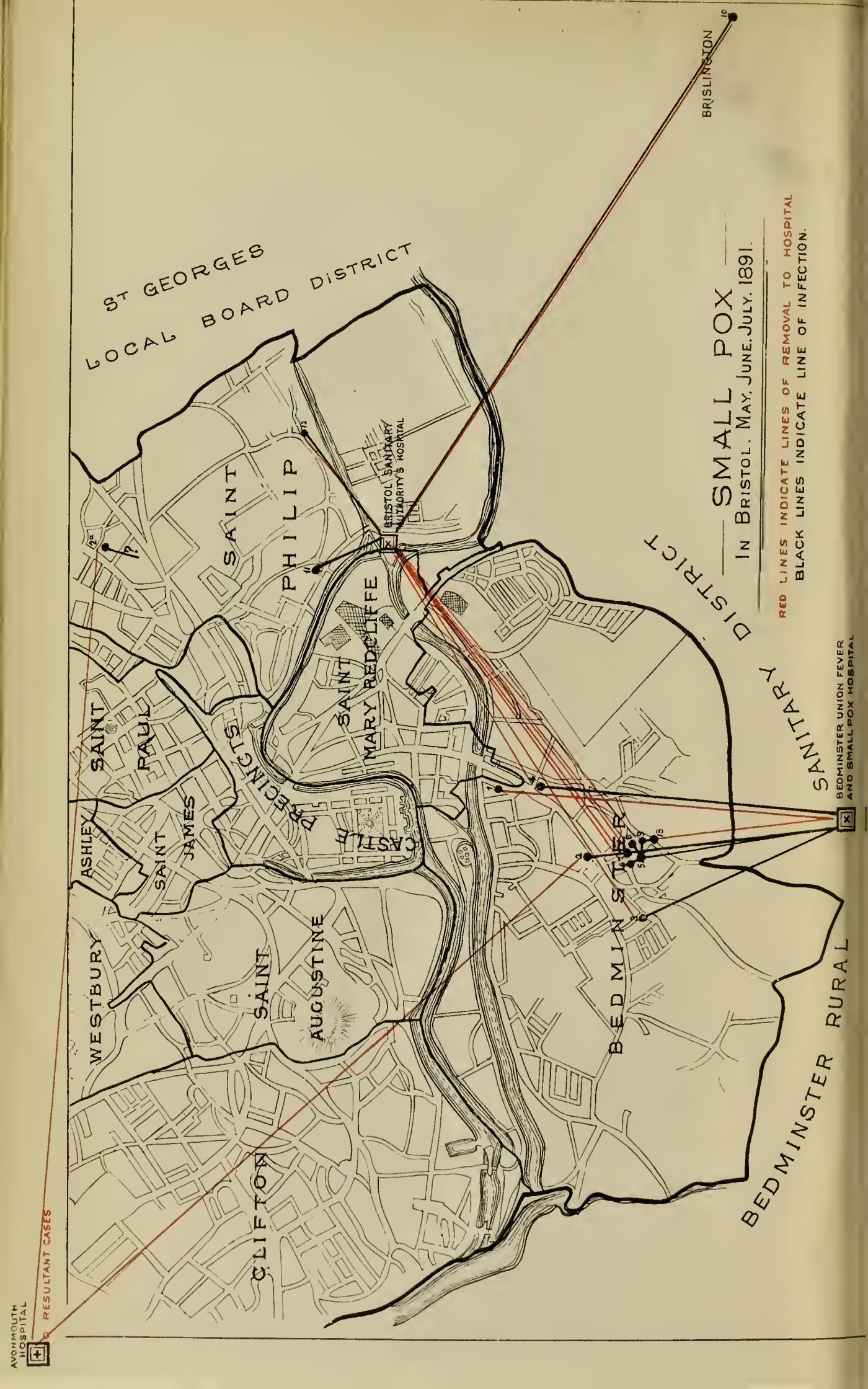
This Table has been corrected in the following particulars:—

Four cases notified as Small Pox were found not to be cases of that disease, the fatal case died in an Institution outside the Borough, and so does not appear in the General Returns. Twenty-four cases notified as Scarlet Fever proved subsequently not to be cases of that disease, and one case notified as Diphtheria was afterwards found to be Scarlet Fever. One case notified as Typhus was found not to be a case of that disease.

NOTIFICATION.

Particulars as to removal and Disinfection in all Cases Notified during the Year, 1891.

The Fevers known by the following names:—										TOTALS.
Small Pox.	Diphtheria, Membranous Croup.	Bryspellets.	Typhus.	Scarlet Fever or Scarletina.	Relapsing Fever.	Contagious and Doubtful.	Puerperal.	Typhoid.	Cholera.	
Cases removed to Hospital, Infirmary, or Children's Hospital ...	...	6	...	12	...	...	...	...	...	53
Cases removed to Sanitary Authority's Hospitals ...	14	...	...	137	...	...	...	...	...	151
Cases removed by Guardians ...	2	...	...	23	...	2	...	...	...	27
Total cases nursed at Home ...	...	64	135	716	...	81	...	8	10	1014
Total cases known or notified ...	16	70	185	888	..	117	..	8	11	1245
Cases in which disinfection of bedding, clothing, and rooms has been carried out, and necessary precautions taken under the supervision of District Inspector ...	16	65	2	864	...	109	...	7	10	1071
Cases in which disinfection was carried out to the satisfaction of Medical Attendant or in which Disinfection was unnecessary ...	...	5	133	24	...	8	...	1	1	124



PREVALENCE OF SICKNESS.

Small Pox.

In January two cases of Small Pox were brought to the City on board of a Portuguese schooner. Immediate isolation and the observance of due measures of disinfection and re-vaccination, effectually prevented any extension of the disease.

(See Port Report).

In April a second outbreak of Small Pox occurred, which extended through May and June, and presented throughout features of considerable interest.

On Thursday, April 30th, a man—S. P., 29,—a Corn Porter (case 1 on map), sickened of Small-pox, and was removed on Monday, 4th May, to the Nover's Hospital, by the Bedminster Guardians.

Although this case was not formally reported to me by the medical attendant until the 6th May, owing to an oversight on his part, District Inspector Bush had received information about the case from the Relieving Officer on May 5th, the day after removal to Hospital, and he at once made arrangements for proper disinfection of the patient's house and belongings, which was duly carried out on the afternoon of the same day. The only other occupant of the house was the patient's father, who was re-vaccinated on 7th May: his wife had left home with the children during the previous week, and was now living apart. No further development of Small-pox occurred in connection with the patient's house or relatives.

The origin of this case was obscure. There had been no Small-pox in the City since the imported cases of January, which left no issue, and the man had not been away from Bristol. He had, however, been working in his occupation as a corn porter on board of two foreign vessels: the "Kronberg," from Nicholaieff,

which arrived on Tuesday, 14th April, and left for Cardiff on Monday, 20th April; and the "Wilhelm," from Libau, in the Baltic, which arrived on Friday, 24th April, and left for Cardiff on Friday, 1st May. Both of these vessels had been inspected upon arrival, and no history of sickness was disclosed; nor upon communicating with the Port of Cardiff could we learn that any further development of disease had occurred after leaving Bristol.

As the patient sickened on Thursday, 30th April (papular rash on Saturday, 2nd May), the fact remains that, accepting the usual incubation period of 12 days, he would have contracted the disease on or about Saturday, 18th April, at which period he was at work on the "Kronberg." There is no evidence, however, to show that any infected person or material was present on board that vessel, and as there were at the same time some vessels in Port having cargoes of rags on board, it is possible that he may have come into contact with some infected material on one or other of these boats, and may thus have contracted the disease. With this patient's removal to Hospital, began the series of mishaps which led to the development of twelve other cases in direct causal sequence from this primary case. One further case which developed in a distant part of the City (2a on the map), and in which the source of infection was untraced, completed the 14 cases of this summer epidemic; and at this total, thanks to early information afforded by the Notification Act, and to the very ready co-operation of medical practitioners, any further spread was averted.

The Hospital of the Bedminster Guardians, to which the patient was removed, consists of two wards, designed for the reception of a few patients suffering from an infectious disease. As the wards are in direct communication, cases of one such class of disease only can be received for isolation purposes at a time. It is well situated in the open country, but from its small size it cannot enjoy the advantage of resident medical supervision. The Hospital is outside the City Boundary. One nurse is resident and in charge at ordinary times, but in an emergency temporary nursing-help is engaged from outside.

On Saturday, May 9th (on the ninth day of the disease), the patient died, and was buried on Monday, the 11th.

As the services of the undertaker who usually acted for the Guardians appear not to have been available, the burial was entrusted to another undertaker, E. H., who admits that, having no preconceived notions on the subject of the carriage of infection, he performed all the necessary details preliminary to burial, in his ordinary clothes, without any special precautions, and, indeed, without apparently the very ordinary precaution of washing his hands before returning home. As the case was a confluent one, fatal on the ninth day, the nature of the incurred risk is sufficiently obvious.

The undertaker himself was well vaccinated, and escaped infection. His family consisted of six other persons,—three girls aged 22, 18 and 10, all well vaccinated, and three boys,—two aged 18 and 9, well vaccinated, and one aged 13 unvaccinated, because delicate in infancy. On Whit-Tuesday, 19th May, the 10th day after the death of the first patient and the 8th after his burial, this boy (E. H. 13), the only unvaccinated member of the family, sickened of Small Pox, and was moved to your Authority's Hospital at Avonmouth, where, after a severe attack, he recovered. (Case 2 on map.)

[To this Hospital was also moved on 23rd May, a man,—J. H. (Case 2a on map), who passed through a very mild attack of Small Pox; no connection with the series of cases arising from S.P. could be traced]. No spread of disease at any time has occurred from this Hospital.

Between the 9th and 11th May, F. P., 22, a Plumber (case 3 on map), was engaged at the Hospital in making S.-P.'s shell previous to burial, and on Wednesday, 20th, about 10 or 11 days after exposure, he sickened of Small Pox, and was removed to your Authority's Hospital in St. Philip's Marsh.

On the 11th, also, T. C., 46 (case 4 on map), was engaged carrying the coffin, and 11 days afterwards, on Friday, 22nd, he also sickened of Small Pox, and was removed to St. Philip's Marsh.

Revaccination was arranged for, where necessary, in the families of the above cases; proper precautions of disinfection were

observed, and no further development of Small Pox took place in connection with any of these cases.

Thus ended the series of infections directly consequent upon the death and burial of the initial patient.

But between the 1st and 9th of May, it had become necessary to engage the services of a temporary nurse, untrained, who lived next door, in C— Street, Bedminster, to the family of a girl, K. T., 15 (case 5 on map); the nurse was friendly with this girl, who sickened on Whit-Tuesday, 19th May. The girl was vaccinated, and had a light attack, so light indeed, that it was passed over by the medical attendant as "Chicken Pox," and no precautions of any kind were advised or taken, nor was the case notified.

The House in which this case occurred was tenanted by two working-class families : one the T. family, consisting of father and mother and five children ; the other, the F. family, consisting also of father and mother and five children.

About Thursday, 4th June, F. T., 13 (case 6 on map), sister of K. T., sickened of a somewhat severe attack of Small Pox, but relying on the previous diagnosis, the parents sought no further medical aid, and adopted no further precautions.

Thus it happened that my attention was not called to these cases until Monday, 15th June, when the medical attendant of the F. family notified T. F. 12 f., and G. F. 11 m. (cases 7 and 8 on map), as suffering from Small Pox, and I at the same time discovered the two previous cases in the house (5 and 6), and also the father, G. F., 32, Miner (case 9 on map), who was obviously suffering from the initial fever of Small Pox, together with a well-marked preliminary erythematous rash on the extensor surfaces of his elbows and knees, but with no papular rash as yet apparent. He had sickened on the previous Saturday, and subsequently developed a sparse eruption on face, wrists, and body, and made a good recovery.

These five cases were removed to the Hospital in St. Philip's Marsh on Monday, 15th June.

The girl and boy were remarkably well vaccinated, and owing to their youth, had lost but little of the full protective influence of vaccination. After somewhat marked fever on the 10th to 12th June, a very few papules appeared on the girl, and but one discoverable papule on the boy's face ; and the remission in fever, usual upon the appearance of the rash in modified Small Pox, was most marked. Both the girl and boy were quite merry and cheerful in Hospital ; in fact, perfectly well, except as sources of danger to others, and might have pardonably escaped recognition as Small Pox, in a non-infected house.

As the patient, K. T., worked for a tailor, and the mother did button-hole work at home, your Committee will understand that I was sufficiently anxious as to the possible results of the 27 days' interval of unrecognised sickness—(19th May, to 15th June). Every care was at once exercised in tracing clothing, and in controlling work and school attendance ; and I had this circular letter printed and circulated amongst the Medical Practitioners in the district :—

Private and Confidential.

*Public Health Offices,
40 Prince Street, Bristol,
June 16th, 1891.*

Dear Sir,

Some cases of Small Pox may possibly be expected to arise in the course of the next month, and I shall feel very much obliged if you will kindly let me know of any suspicious cases of fever occurring in your practice, accompanied by headache or lumbar pains, and followed in two or three days by any pimples, however few, on the face or body.

I shall be pleased to visit any such cases with you, that we may discuss the probability of their being vaccination-modified Small Pox ; as, unless one is on guard, such cases may, in a busy practice, be easily overlooked.

Yours faithfully,

D. S. DAVIES,

Medical Officer of Health.

To Dr.

As I had hoped, the most ready and prompt response was made on every hand, and I had the satisfaction of visiting, with the Medical Attendants, during the next few weeks, ten cases of doubtful disease, all of which, we were fortunately able to determine, were not Small Pox. Indeed, only one further case resulted from this infected house. E. F., 36 (case 13 on map), the wife of G. F., (case 9), who sickened on 27th June, about 12 days after her husband's removal to Hospital, and was removed to the Bedminster Guardians' Hospital, where she made a good recovery.

But now the infection made a fourth start from a fresh centre. The Hospital of your Authority in St. Philip's Marsh is situated in a somewhat confined situation, and the female wards of the Small Pox block are within a few feet of a 12-ft. 6-in. wall ; immediately on the other side of which are the workshops of some Flax Mills, where several girls are constantly at work.

On the 15th of June, three of the cases from C— Street had been admitted to this ward, one in the third week, one in the second week, and one, a very light case, in the first week of the disease ; and on about the 13th day after their admission, two of the girls working in the Flax Mill (cases 10 and 11 on map), sickened almost simultaneously of Small Pox, and were removed to Hospital, on the 2nd and 3rd July ; but now all these patients were transferred to an empty scarlet fever block on the opposite side of the premises. There is no reason whatever to suppose that infection in this case was personally conveyed ; no further cases occurred in the factory or at the houses of the patients. This favourable result is in great part due to the very prompt notification by the Medical Attendants of both these cases when in the papular stage of the eruption, so as to admit of their early removal to Hospital, and of the immediate adoption of preventive measures.

On the 29th June, a case was reported to me from Brislington, a village outside the City, in a young man, W. M., 19 (case 12 on map), who worked near the St. Philip's Hospital, and passed it daily on his way to and from a coffee shop. He was acquainted with no one in the Hospital, and can have had no personal communication with its inmates ; but there would appear to be little doubt that he received the infection while passing in the road close to the Small Pox wards soon after the admission of the C— Street

1891.
APRIL, T. 14 S.S. Kronberg arrived

W. 15
Th. 16
F. 17
S. 18
S. 19
M. 20 S.S. Kronberg left for Cardiff

S. P. at work on Kronberg.

T. 21
W. 22
Th. 23
F. 24 S.S. Wilhelm arrived

S. 25

S. P. at work on

S. 26

M. 27
T. 28
W. 29

Wilhelm.

12 days
Th. 30 S. P. (1) sickened

MAY, F. 1
S. 2

S. 3

M. 4
T. 5

W. 6 S.S. Wilhelm left for Cardiff

Th. 7
F. 8

S. 9 S. P. died

S. 10

M. 11 S. P. buried

F. P. (3) and T. C. (4) employed

T. 12
W. 13

Th. 14
F. 15

S. 16

S. 17

M. 18

T. 19 Eb. H. (2) sickened—rash on 23rd...

W. 20 F. P. (3) sickened—rash on 24th...

Th. 21 T. C. (4) sickened—rash on 26th...

S. 23

10 days
9 days
11 days

K. T. (5) sickened, unrecognised

During this week ... temporary nurse engaged who knew K. T. (5)

About 12 days

A.
The
Undertaker
Group.
(3 cases.)

S. 24
M. 25
T. 26
W. 27
Th. 28
F. 29
S. 30
S. 31

JUNE, M. 1
T. 2
W. 3
Th. 4 F. T. (6) sickened—rash on 7th

F. 5
S. 6

S. 7
M. 8
T. 9
W. 10

Th. 11 J. F. (7) and G. F. (8) sickened—rash on 13th

F. 12
S. 13 G. F. (9) sickened.

S. 14

M. 15 Above cases notified and moved to St. Philip's Hospital (5, 6, 7, 8, 9)

T. 16
W. 17

Th. 18
F. 19

S. 20

16 days.

9 days.

13 days.

9 days.

14 days.

9 days.

cases This case was, by arrangement with the Rural Sanitary Authority, removed to the St. Philip's Hospital, where he recovered, and no further development of the epidemic in any direction took place.

This outbreak affords a concise example of the way in which one case of infectious disease will, if allowed, establish itself in several centres, and spreading from each, will rapidly multiply and become widely diffused. The danger resulting from incomplete Hospital supervision of patients before and after death, is also well indicated in the case of the Bedminster Guardians' Hospital. The spread from your Authority's Hospital to adjacent premises within 13 days of the introduction into the wards of acute and convalescent cases from C— Street, is noteworthy, especially as the same wards were fully occupied during the 1887—88 epidemic, without any such extension taking place.

The prevalent wind during the week ending June 20th, when this extension occurred, was N.W., and the affected work-shops are directly on the S.E. of the Hospital wards, as is also the road by which W.M. would pass on his way to and from the coffee shop.

It is somewhat remarkable that, although the disease existed unrecognised in the house in C— Street for three weeks, by which time five cases had accumulated in this house, no extension to other houses in the street or neighbourhood occurred, although no restriction of any kind was put upon the movements of the inmates, and button-hole work was taken in by the mother of two of the patients, who was herself, however, unaffected. It also seems clear from the history of the epidemic, that under ordinary circumstances Small Pox in a vaccinated community is readily to be controlled, if early "Notification" and the rational measures of precaution which this word connotes, can be secured. The disease appears to show comparatively small tendency to spread beyond the sick-room, if the case is removed as early as the papular stage.

The indications in the text of the value of vaccination are suggestive to the receptive, but as the instances are few, they may be treated as suggestions only.

Cholera.—Choleraic Diarrhoea.

No cases of Cholera or Choleraic Diarrhoea came under notice during the year.

Diphtheria, Membranous Croup.

The diseases notified under the heads Diphtheria, Membranous Croup, are most conveniently treated as the same disease, for statistical and classification purposes.

During the 52 weeks of 1891, 71 cases of Diphtheria or Membranous Croup were notified,* compared with 56 during the 48 Notification weeks of 1890 (Notification came into force on February 12, 1890).

The number of deaths returned (16) was the same for both years.

The local incidence of the disease, as well as the case mortality in the sub-districts of the City, varied considerably, as will be seen from the following table:—

DIPHTHERIA, MEMBRANOUS CROUP.

* One case subsequently appeared not to be Diphtheria.

From this table it appears that out of 70 cases occurring in the whole City there were 16 deaths, giving a case mortality of 22·8 per cent., and a Diphtheria death-rate of '07 per 1000 living.

This death-rate is less than the average rate in Bristol from Diphtheria for the ten years 1880-89, which was 0·09, and is considerably less than the rate for the 28 great towns for the same ten years, which was 0·18.

The number of deaths returned as due to Diphtheria in Bristol during the eleven years 1880-91 are here shown: together with the death rates from this disease for the same series of years in Bristol and in the 28 great towns:—

	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
No. of Deaths ...	10	8	13	19	25	28	23	26	15	16	16
Population ...	206,503	208,007	209,522	211,048	212,586	214,134	215,694	217,266	218,848	220,442	222,049
*Annual death-rate per 1000 living...	.04	.03	.06	0·9	0·11	0·13	0·10	0·11	0·06	0·07	0·07
28 great towns ...	0·14	0·16	0·16	0·17	0·17	0·16	0·18	0·21	0·26	0·24	0·21

These figures are favourable, inasmuch as they show that the continuous increase noticed of late years in the fatality from Diphtheria in the large Urban Centres, has not since 1886 been shared by Bristol. Dr. Thorne Thorne has pointed out (Milroy lectures) that we are face to face with a steadily increasing Diphtheria mortality, and this especially in towns: for since 1880 the incidence of this disease upon towns has become more marked than ever before, and it indeed would appear that in place of its previous marked tendency to prevail in sparsely populated districts rather than in centres of population, it is year by year undergoing a marked change of distribution, by which

* All Bristol rates have been re-calculated upon the recent Census enumeration.

the chief Urban Districts seem to be approaching nearer than before to Rural Districts in their rate of mortality from this disease.

This tendency is particularly noticeable in London, and the Registrar-General in 1889 called attention to the formidable increase in the London mortality from Diphtheria, which disease had been increasing steadily for many years, but in the last two years, 1888 and 1889, made the most alarming bounds, the deaths rising from a total of 953 in 1887, first to 1,311, and then in 1889 to no less than 1,588, whereas the decennial average, after correction for growth of population, was only 932 ; and he further notes that this increase can only be very partially accounted for by a diminution under the heading "Croup." The record for Bristol during the past 11 years shows that a similar continuous rise took place from the year 1882, until a maximum was reached in 1886, since which year the decline, although at first small, has been satisfactorily sustained. Nor can this decline be explained by any transference to the "Croup" heading, as the deaths referable to croup have fallen from the 1887 total of 30—to 8, 13, 2, and 4, during the years 1888 to 1891 inclusive. In considering the figures for the sub-districts of Bristol given above, the discrepancy between the different districts both as to disease-incidence, and case-mortality, will be readily noticed. Thus, while the incidence rate varies very considerably, and would show the highest proportion of attacks to have occurred in Westbury, Redcliff, Ashley, and Clifton ; the case mortality in each of these districts, except Redcliff, was unusually light. For, whereas the percentage of deaths to cases in well-marked attacks of true Diphtheria is frequently as high as 30, the observed case mortality which in Redcliff was as high as 80 per cent. (on 5 cases) ranged from 14.2 in Westbury (on 14 cases) to 8.3 in Ashley (on 12 cases), and 0.0 in Clifton (on 9 cases). The case mortality for the whole City was 22.8.

These particulars as to Diphtheria cannot be regarded as otherwise than satisfactory. It is difficult to completely explain the somewhat remarkable incidence of non-fatal Diphtheria upon certain of the well-to-do districts, while the comparatively small incidence upon the working-class districts showed the usual high case-mortality ; and it would almost appear as if we had to

deal with two sorts of Diphtheria, one of the ordinary type and fatal, the other presenting, and continuing to present, benignant features.

It is impossible to claim, however, any final accuracy for either the incidence-rates or the case-mortality, owing to the comparatively small number of instances from which our record is drawn ; but I imagine it is not unlikely that some at least of the observed variations as to incidence and fatality are due to the want of agreement amongst practitioners as to what actually constitutes Notifiable Diphtheria.

In every notified case of Diphtheria careful enquiry has been made into the general sanitary conditions surrounding the case, and in 20 of the houses where cases occurred one or another of the sanitary arrangements was defective, leading to nuisance. These were in each instance rectified.

Erysipelas.

During the year 135 cases of Erysipelas have been notified, and 12 deaths, compared with 102 cases and nine deaths in 1890. Many of the cases notified are trivial, and do not seem to call for detailed measures of precaution or disinfection.

The enquiries made into every case have, it is true, resulted in the discovery of 30 houses where various sanitary defects required attention ; but it is at least problematical in the majority of cases whether these had any causal relation to the illness, and beyond the discovery of these ordinary nuisances, which a house-to-house inspection equally well reveals, I doubt whether the notification of the disease is of much real value.

Scarlet Fever or Scarlatina.

The number of cases of this disease notified during the 52 weeks of 1891 was 912, compared with 559 during the 46 notification weeks of 1890 ; and the number of deaths returned was 37 compared with 40 during the previous year.

The distribution of Attacks by age was as follows :—

Under 5 years	...	...	...	267
5-10	„	...	...	311
10-20	„	...	...	260
Over 20	„	...	...	74

This table shows the incidence rate of the disease upon the registration sub-districts ; and the percentage of deaths to cases in each sub-district and in the whole city.

Scarlet Fever.

Sub-Districts	Redcliff.	Castle Precincts	St. Paul.	St. James.	St. Augustine	Bedminster.	Clifton.	Ashley.	St. Philip.	Westbury.	Public Inst.	City.
Populations ...	9,287	5,558	19,046	7,817	13,788	45,812	29,361	24,190	51,650	15,540		
Cases Notified	19	12	56	27	81	158	187	96	168	80	4	888
Incidence rate of attacks per 1000 population ...	2.0	2.1	2.9	3.4	5.8	3.4	6.3	3.9	3.2	5.1		3.9
Deaths ...	0	0	4	2	7	4	8	4	4	2	2	37
Percentage of deaths to cases (case mor- tality).	...	...	7.1	7.4	8.6	2.5	4.2	4.1	2.3	2.5	...	4.1
												222,049

The number of deaths recorded from Scarlet Fever is slightly less than in 1890, although the total number of cases is in excess, after making allowance for the first six weeks of 1890 before notification was in force.

This excess of cases notified is almost entirely accounted for by the Milk epidemic which occurred in the first weeks of 1891, giving rise to some 250 cases, with, however, very small mortality.

This epidemic exhibited very markedly the general characteristics of outbreaks of disease transmitted by milk.

1.—The outbreak was sudden, and the cessation well marked ; a large proportion of the attacks were nearly simultaneous, and the outbreak reached its maximum very rapidly, as seen from the record of weekly notified attacks.

Week ending---

DATE	Dec.	Jan.	Jan.	Jan.	Jan.	Jan.	Feb.	Feb.	Feb.	Feb.
	27	3	10	17	24	31	7	14	21	28
ATTACKS	6	12	22	104	38	28	26	24	11	13

2.—In several cases during this outbreak it happened that two or more persons in the same household were taken ill at the same time. Thus, two cases were notified simultaneously in each of 12 houses, 3 cases in each of two houses, 4 in each of 4 houses, and 5 cases in each of 3 houses ; these particulars relate to the first invasion of each household.

3.—A large proportion of the households attacked, viz., 70 out of 205, or 34 per cent. had a common milk supply, and distributed by the same retailers.

4.—In the districts most heavily affected, viz., St. Paul, St. James, and Ashley, 1 in 40 of the total inhabited houses in the district were attacked, whereas of the households supplied by the implicated retailers 1 in 7 were attacked.

5.—The disease affected chiefly consumers in the well-to-do classes. This was particularly noticeable in an offshoot of the epidemic in Clifton, where also the number of attacks amongst the adult population was greater than is found when the disease is spread by the usual school or visiting exposure to infection.

The case-rate was, as nearly as can be estimated, about 6 per cent., that for the whole city during the year being only 4.1.

The sudden increase of notifications in the second week of January caused an immediate enquiry to be made which served to connect the chief prevalence of the disease with two milk rounds in the city, and further enquiry showed the milk distributed in the infected districts to have been derived from two milk farms in an outside district where Scarlet Fever had for some weeks been very

rife. On Monday, 12th January, the retailers, who gave very ready and prompt assistance, stopped distributing all suspected milk in the city, and also discontinued supplies from the implicated, farms. These farms were also visited with the view of discovering whether there was any disease amongst the animals of a scarlatinal nature, but no history of any such illness, nor any present indications of its presence could be discovered, and the manner in which the infection can have gained access to the milk has never been clearly demonstrated, though the prevalence of Scarlet Fever in the district would support the suggestion of possible contamination by some of the workers on the farms.

Notification proved of extreme service in calling early attention to the presence of an unusual amount of Scarlet Fever in the city, and in expediting the taking of early precautions, without which the extension of the disease might have been considerably more serious. On subsequent occasions also, notification has directed attention to an excess of the disease amongst the scholars at particular schools, usually through the continued attendance of an unrecognised case, and has permitted of early enquiry, followed by necessary precautions.

As much use has been made as is possible of the limited accommodation at your Authority's Fever Hospitals in isolating Scarlet Fever, but much ampler ward accommodation is needed to effectually deal with this disease.

Typhus Fever.

No cases of Typhus occurred in the city during the year. One suspicious case, which was reported in February, was kept under observation, and subsequently proved not to be a case of this disease.

Enteric Fever.

The number of cases of Enteric Fever notified, and the number of deaths returned from this disease during the past four years are shown below.

	Cases known or notified.	Deaths.
1887	66	33
1888	99	28
1889	114	38
1890	122	33
1891	116	23

Notification was not compulsory until 1890, so that a complete list of all cases was not obtained before this year; but the figures show that an increasing proportion of cases was being year by year voluntarily notified to this department, as the value of the assistance which could be afforded became evident.

The fatality from Enteric Fever during recent years has fluctuated from a minimum of 16 deaths in 1885 to a maximum of 39 in 1886. In 1887 the mortality fell to 33, and again to 28 in 1888. In 1889 the number of deaths rose to 38, falling in 1890 to 33, and again in 1891 to 23.

The prevalence and fatality of the disease in each quarter of 1891 is shown here.

	Cases.	Deaths.
1st Quarter	27	7
2nd Quarter	25	4
3rd Quarter	37	4
4th Quarter	28	8
	117	23

This table shows the cases of Enteric Fever notified in each sub-district, as well as the attack rate per 1000 population, and the case mortality:—

Enteric Fever.

Sub-Districts	Redcliff.		Castle Precincts.		St. Paul.		St. James.		St. Augustine		Bedminster.		Clifton.		Ashley.		St. Philip.		Westbury.		Public Inst.		Bristol—City.		
Population ...		9,287																							
Cases notified	15	2	5	5,558		19,046		7,817		St. Paul.		45,812		29,361		Clifton.		24,190		Ashley.		51,650		St. Philip.	
Incidence rate of attacks per 1000 population ...	1.61	.35	.26	.51	.43	.63	.44	.33	.48	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.52	
Deaths ...	3	0	2	0	0	0	4	1	3	7	0	3	7	0	3	7	0	3	7	0	3	7	0	23	
Percentage of deaths to cases (case mortality).	20	0	40	0	0	0	13.7	7.6	37.5	28.0	0	0	0	0	0	0	0	0	0	0	0	0	0	19.6	

Enteric Fever is at present admitted into the Public Institutions and into the Guardians' Hospitals for treatment, and 36 cases were nursed in these institutions during the year.

The enquiries made into the sanitary condition of houses in which Enteric Fever appeared, disclosed 39 in which the drainage was defective, and in each instance the defects were remedied.

As noticed in previous years, polluted water played but a very small part in the dissemination of the disease. In two cases pump or well water was in use at the affected houses; one of these was a case brought to a public institution from outside the city; in the other the well which supplied 6 cottages was found to be polluted, and Company's water was laid on.

The cases during the year were scattered, with the exception of a group of cases in Redcliff, in September, which gave rise to

suspicion of the milk supplies. No actual contamination was proved, but considerable care was exercised in regard to all milk supplies in the district, and the disease did not continue to extend.

In July, four members of a family of exiled Russian Jews developed Enteric Fever soon after arrival, with a clear history of having contracted it en route. This family had also settled in the Redcliff sub-district, so that they contributed to the somewhat heavy incidence of the disease upon this district.

Measles.

The deaths from Measles, which fell to 61 in 1888, rose in 1889 to 185, and decreased during 1890 to 92. A very serious epidemic prevailed during the first quarter of 1891, causing 156 deaths during the quarter, and of these deaths 96 occurred in the sub-district of Bedminster. The total mortality for the year reached the high figure of 239, of which 123 were returned in Bedminster. Of the 239 deaths, 229 were of children under five. The unusual fatality was no doubt connected with the extremely cold and variable weather which prevailed during the quarter. This disease is so very readily communicable amongst young children, and is infectious at so early a stage of the illness, that it presents unusual difficulties in its control, and when once it has obtained a hold in a populous working district like Bedminster, or St. Philip, its fatality, especially in cold and variable weather, is excessive.

Whooping Cough.

The mortality from Whooping Cough, which had been 38 and 105 in 1888 and 1889, rose during 1890 to 201, and fell during 1891 to 53, of which 52 were deaths of children under 5. This disease presents almost equal difficulties with Measles in securing any control over its spread, and much of its fatality is due to exposure during convalescence.

Diarrhoea

Caused the unusually small mortality during the year of 58 deaths, the lowest recorded during the past 16 years. Part, at

least, of this diminution is to be referred to the cold and wet summer of 1891, which was not favourable to the prevalence of the Autumnal Diarrhoea of infants, to which by far the larger portion of the Diarrhoea mortality of English towns is due.

Influenza.

This disease did not appear in the mortality returns until the week ending April 4th, when one death was returned in the Registration sub-district of Clifton. During the second quarter of the year it again became established in the city, and between the week ending 16th May until the end of this quarter, 32 deaths were returned as due to Influenza. The largest number of deaths returned in any one week from this cause during the quarter was 7 in the week ending 6th June, and from this point the mortality steadily declined. No such notable increase, either in the general death-rate or in that from diseases of the Respiratory Organs, occurred as characterised the spring outbreak of 1890, and the influence of temperature in determining fatality from this cause would appear to be marked. The highest fatality in any sub-district was recorded in Ashley, where 7 deaths occurred ; 5 deaths were also recorded in each of the sub-districts Clifton and St. Philip, and 4 in each of the sub-districts St. Augustine and Bedminster, 3 in St. Paul, 2 in Westbury, 1 in Castle Precincts, and 1 in the Stapleton Workhouse. The recorded deaths fell to 6 during the third quarter of the year, as the disease still lingered of Bedminster, Clifton, St. Augustine, and St. Philip ; but in the fourth quarter of the year there was a marked recrudescence of the disease, extending from the beginning of November until the end of the year, and resulting in a total Influenza mortality during the quarter of 51.

The behaviour of the disease, as was to be expected at this time of year, resembled its behaviour during the epidemic in the early part of 1890, in that the rise of Influenza mortality was accompanied by a simultaneous and marked rise both in the general mortality and in that due to Respiratory diseases.

The most fatal month was December, during which 35 deaths were recorded from Influenza, the highest number in any one week being 10 in the second, and 11 in the fourth week of the

month. The highest general death-rate reached in any week was in the first week of December (33.4), when the total deaths recorded, which had not exceeded 90 in any week of October, and had not exceeded 113 in any week of November, rose to 142, following a drop in the mean temperature of the two previous weeks from 47.31 degrees F. to 37.43 degrees F. The deaths from Respiratory diseases had also risen steadily through November from 14 during the last week of October to 28, 36, 34, 39, and a maximum of 53 during the first week of December, after which they again declined, and, though still keeping high, did not exceed 34 through the remaining weeks of the year.

Influenza was most fatal during the fourth quarter in the sub-districts of Clifton and Bedminster, in each of which 12 deaths were ascribed to this cause; 8 also were recorded in Ashley, 6 in St. Philip, 5 in St. Augustine, 3 in St. James, 2 in Westbury, 2 in Stapleton, and 1 in the Barton Regis Workhouse; while no deaths were returned as due to Influenza in either of the sub-districts on St. Mary Redcliff, Castle Precincts, or St. Paul.

Phthisis (Pulmonary Consumption).

The conviction is steadily growing that this disease, no less than the group of the common Zymotic Diseases, may be to a large extent controlled by well-considered precautionary measures.

The disease itself is so universal, and its fatality so persistent from year to year, that nothing but the force of "habit" can explain the apathy with which its presence amongst us is tolerated.

During the past 11 years this disease has, single handed, destroyed over 4,000 lives in Bristol; and it is in each year the most fatal of any disease except Bronchitis, and nearly as fatal as all the eight principal Zymotics put together.

	1887.	1888.	1889.	1890.	1891.
Phthisis	332	333	326	413	382
Bronchitis	580	458	455	633	661
The group of Principal Zymotics	664	292	500	536	*516

* Including 90 deaths from "Influenza."

Although, in consequence of the long average duration of cases of Consumption, it is impossible to attempt to secure that isolation which is so effectual in the case of the acute infectious disorders; it is yet possible, by keeping in view its undoubted infectivity, and the methods of its spread, to lay down such precautions as would materially tend to check its extension.

The Health Department of New York City have formulated the following rules, based upon the conclusions arrived at by a Committee of Physicians and Pathologists of that City:—

Rules for Preventing the Spread of Consumption.

“Pulmonary Tuberculosis (Consumption) is directly communicated from one person to another. The germ of the disease exists in the expectoration of persons afflicted with it.

“Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which living germs are suspended as dust.

“The material, which is coughed up sometimes in large quantities by persons suffering from Consumption, contains these germs often in enormous numbers. This material when expectorated frequently lodges in places where it dries, as in the street, on floors, carpets, handkerchiefs, &c. After drying in one way or another it is very apt to become pulverised and float in the air as dust. By observing the following rules the danger of catching the disease will be reduced to a minimum:—

1.—“Do not permit persons suspected to have Consumption to spit on the floor, or on clothes, unless the latter be immediately burnt. The spittle of persons suspected to have Consumption should be caught in earthen or glass dishes containing the following solution:—

“Corrosive sublimate	...	...	1 part.
“Water	...	...	1,000 parts.

2.—“Do not sleep in a room occupied by a person suspected of having Consumption. The living

“rooms of a consumptive patient should have as little furniture as practicable—hangings should be especially avoided. The use of carpets, rugs, &c., ought always to be avoided.

- 3.—“Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption, as soon after eating as possible, using boiling water for the purpose.
- 4.—“Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons.
- 5.—“Do not fail to catch the bowel discharges of consumptive patients with diarrhoea, in a vessel containing Corrosive sublimate 1 part, water 1,000 parts.
- 6.—“Do not fail to consult the family physician concerning the social relations of persons suffering from suspected Consumption.
- 7.—“Do not permit mothers suspected of Consumption to nurse their offspring.
- 8.—“Household pets (animals or birds) are quite susceptible to Tuberculosis; therefore do not expose them to persons afflicted with Consumption; also do not keep, but destroy at once, all household pets suspected of having Consumption, otherwise they may give it to human beings.
- 9.—“Do not fail to cleanse thoroughly the floors, walls, and ceilings of the living and sleeping rooms of persons suffering from Consumption at least once in two weeks.”

To which may be added—

- 10.—“It is advisable to boil all cow’s milk thoroughly before use, especially by children, as it is very probable that Tuberclle in children is frequently caused by the use of milk from consumptive cows.”

11.—“The lungs should be protected from injury such as
“arises from damp and overcrowded dwellings, and
“from dusty occupations.”

The necessity for disinfection of clothes, bedding, and rooms, after the death of a consumptive patient, would appear to be obviously indicated in the interest of the family—one or two applications for such disinfection have been received and attended to during the year, but this precaution does not appear to be generally carried out.

D. S. DAVIES,

Medical Officer of Health.

BRISTOL SANITARY AUTHORITY'S HOSPITALS.

REPORT FOR YEAR 1891, ENDING JANUARY 2ND, 1892.

Small Pox Hospital.

Admitted ...	...	...	...	...	...	...	11
Dismissed cured	...	...	...	...	...	...	11

Hospital empty at end of year.

Fever Hospital—Scarlet Fever.

Remaining from year 1890	...	...	...	9	146
Admitted ...	...	...	...	137	
Dismissed ...	...	...	...	108	146
Died ...	...	...	...	2	
Remaining in Hospital	...	...	...	36	146

Age Groups of Patients Admitted.

0	1	5	15	25	60
to	to	to	to	to	upwards.
1	5	15	25	60	
0	22	74	23	4	0

The mortality bears favourable comparison with any other Institution for Infectious Diseases, only 3 deaths occurring during the year, those being in children between the ages of 1 and 5. Taking into consideration our limited accommodation, it must be evident that care and attention has not been wanting on the part of the nurses.

The following cases are of some interest :—

Case I. L. M., female (æt 10), was admitted into the Hospital Feb. 17th, 1891, suffering from an attack of Scarlatina Simplex, with all the usual symptoms well marked. Source of infection unknown. Temperature on 3rd day 102° . On the 5th day the temperature was normal, the rash had almost entirely disappeared, and was followed by desquamation. On the 10th day a recurrence of all the former symptoms took place in an intensified form ; the temperature rapidly rose to 104° , at the same time the patient complained very much of sore throat, the fauces being ulcerated and glands swollen. The patient was for a time in a critical condition, taking very little nourishment ; delirious at night ; temperature varying between 103° and 105° , with only very slight morning remissions. The patient made a rapid and uninterrupted recovery, desquamating in some places for the second time, and was discharged cured on April 1st, 1891.

The interesting points in this case are :—

The recurrence within 14 days of the attack, and desquamation taking place for the second time. I have

never, in my many years of experience, met with a case similar to this; neither do I know of any record by any medical authority.

Case II. A. F., female (æt 4), a very delicate child, was admitted on Oct. 22nd, 1891, suffering from Scarlatina Auginosa, which presented nothing unusual in its early course.

During the stage of desquamation, acute suppuration of the middle ear set in, followed by Pyæmia, which led to the formation of a large lumbar abscess, abscesses also formed on the soft parts under the tongue; and the urine gave evidence of suppuration in the kidneys. It is worthy of note that the abscesses were for the most part superficial,—not a single joint was affected. About a month after admission, the skin over the sacrum showed signs of destruction, and in spite of every precaution, gave way, leaving a large and deep ulcerating surface. The child passed all its urine and faeces in the bed. For three days she lay in a semi-unconscious state; no one who saw the child thought she could have lived more than a few hours, but I am thankful to say we were rewarded for our exertions by the recovery of our little patient. As regards treatment, the usual saline medicines were used in the first part of the illness, and as soon as pyæmia became evident, the patient was put on quinine and iron, which was steadily persevered with until removal from the Hospital, which took place, December 14th, 1891.

Other sequelæ occurred in a few other cases which were:—1 of Rheumatic Fever, occurring in a girl aged 11 years, presenting nothing special; she made a good recovery. In another case, that of a boy aged 3; he apparently recovered from the immediate effects of the specific poison on the system, to die from hyperpyrexia; only one case of Acute Albuminuria presented itself.

Small Pox Hospital.

Remaining from last year	...	...	...	0
Admitted (1891)	...	...	...	11
Dismissed, cured	...	...	...	11

In the cases admitted, although so few in number, almost every variety of Small Pox, except the haemorrhagic, was represented.

All had been vaccinated except 2, and 1 of these was said to have been vaccinated in infancy, although no marks were visible. They all recovered.

Below is added a short analysis of 608 cases admitted into the Small Pox Hospital since the year 1871.

Of 110 un-vaccinated patients, 46 died ; the greater number of the remaining 64 suffered from a confluent form of the disease, and in many cases experienced a hard struggle for life.

Of 474 patients, 20 died who had been indifferently vaccinated, and only 4 died who had been well vaccinated ; 2 of the latter were known to have been heavy drinkers.

The following cases may prove of some interest, although the minute facts are wanting, owing to a very limited supply of notes.

Case I. An interesting case occurred in 1885 in one of the nurses, L. W., at the time when Small Pox and Scarlet Fever were admitted together, but placed in separate and distinct blocks of buildings. This nurse contracted Scarlet Fever whilst attending to her duties ; the rash had developed in the usual way, and she was progressing favourably until the 7th day. Before the disappearance of the Scarlet Fever rash, she was taken worse, the temperature again rose, and the usual symptoms of Small Pox were manifest ; in a day or two the papules developed, and afterwards matured, as in an

ordinary case of Small Pox. She was at one and the same time desquamating from Scarlet Fever, and pustules of Small Pox were maturing. She eventually made a good recovery.

It is interesting to note that the virus of one disease formed no protection against the virus of the other.

Case II. Another case of some interest occurred in a man, G. C. (æt 28), who was admitted Nov. 17th, 1887, suffering from Small Pox. The eruption was well developed; the patient progressed favourably until Nov. 24th, when the first symptoms again returned, a second crop of papules appeared, and the pocks again filled with pus, remaining out until Dec. 11th, when they commenced to dry away; he ultimately made a good recovery, and was discharged cured, Dec. 31st, 1887. This patient was said to have been unsuccessfully re-vaccinated.

G. L. PAULI,

Medical Attendant.

STREET LIST,

Arranged by Sub-Districts, showing the Locality of Deaths
from certain specified causes.

(Deaths occurring in the Public Institutions situated in Registration Sub-Districts are omitted from this List).

ST. MARY REDCLIFF.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
Arch Place	1
Ash Lodge	1
Avon Street	1
Bath Street	1
Bedminster Parade	1
Brickyard	1
Chatterton Square	1
Church Street	1
Colston Place	1
Freshford Lane	1
Guinea Street	1
Jubilee Place	1
Mitchell Lane	1
Nelson Place	1
Pile Street	1
Pipe Lane	1	..	..	..	..
Providence Place
Redcliff Mead Lane	1	..	..	..	..
Redcliff Street	1	..	..	..
Rose Alley	1	..
Somerset Place	1	..
Thomas Lane	1
Thomas Street	1	1
Temple Back	2	..
Temple Street	1	2
Victoria Square, Temple	1	..
Total ...	0	0	1	1	5	15	13

CASTLE PRECINCTS.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
All Saints' Street	1
Bridge Street	1	2
Castle Green	1	1	1
Cock and Bottle Lane	1	1	1
Cornish Mount Court	1
Grove	1	1	1
John Street	1	1	1
King Street	4	2	1	1
Penn Street	1	1	1
Queen Street	1	1	1
Rope Walk	1	1	1
Small Street	1	1	1	1
Tower Lane	1
Total ...	0	0	0	0	5	10	6

ST. PAUL.

Albert Street ...	...	...	...	...	...	1	1
Argyle Terrae ...	...	...	...	...	1	...	...
Arthur Lane ...	...	...	...	...	...	1	1
Backfields ...	...	...	...	...	...	1	1
Badminton Road ...	...	...	...	...	...	1	1
Balloon Court ...	...	...	...	...	...	1	1
Blinker's Steps ...	...	...	...	...	...	1	1
Brigstoeke Road ...	...	...	...	...	1	...	...
Butterfield Court ...	...	...	...	...	...	1	1
Cairns' Creseent ...	...	...	...	...	...	1	1
Callowhill Street ...	...	...	...	...	...	1	1
Churehill's Buildings ...	...	...	...	...	...	1	1
City Road ...	...	...	...	...	...	1	1
Cross' Gardens ...	...	...	1	...	...	1	1
Dale Street ...	...	...	...	...	...	2	1
Davey Street ...	...	...	...	...	1	1	2
Earl Street ...	...	...	...	...	1	...	1
Ellbroad Passage ...	...	...	...	...	...	1	1
Ellbroad Street ...	...	...	...	...	...	1	1
Gideon Plaee ...	...	...	...	1	...	1	1
Gloucester Court ...	...	...	...	...	...	1	1
Lake Street ...	...	...	...	...	...	1	1
Lower Ashley Road ...	...	...	...	...	...	1	1
Lower Castle Street ...	...	...	...	...	...	2	1
Newfoundland Road ...	...	...	...	...	...	1	1
Newman's Yard ...	...	...	...	...	...	1	1
Nicholas Road ...	...	...	...	...	...	1	1
Norfolk Street ...	...	...	...	...	...	1	1
North Street ...	...	...	...	...	1	...	...
Orange Street ...	...	...	...	...	...	...	1
Rosemary Street ...	...	...	...	...	...	...	1

ST. PAUL.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
Ruffett's Court	1
Stokes' Croft	...	1	...	...	...	...	1
Surrey Street	1	1
Tabernacle Row	1
Thomas Street	1
Victoria Place	1
Water Street	1	1
Wilder Street	2	...	1
Wilson Street	...	1	...	...	1	...	1
York Street	1
Total ...	0	4	0	1	4	29	17

ST. JAMES.

All Saints' Almshouses	...	...	...	...	...	1	...
Beaufort Place	..	...	...	...	...	1	...
Bedford Row	...	...	...	...	...	1	1
Bloomsbury Buildings	...	...	...	...	1	1	...
Bloomsbury Court	...	...	...	...	...	1	1
Cannon Street	..	...	...	...	...	1	1
Cherry Lane	...	...	...	...	1	1	1
Cottage Place	...	...	...	...	1	1	1
Deep Street	...	...	...	...	1	1	1
Dighton Street	...	...	...	...	1	1	1
Eugene Street	...	...	...	...	1	1	1
Gloucester Place	...	...	...	...	1	1	1
Horsefair	...	1	...	...	1	1	1
Johnson's Court	...	...	...	...	1	1	1
Little James Street	...	...	...	...	1	1	1
Marlborough Street	...	...	...	...	1	1	1
Pembroke Place	...	...	...	...	1	1	1
Upper Maudlin Street	...	1	...	...	1	1	1
Windsor Square	...	...	...	...	1	1	1
Total ...	0	2	0	0	2	10	9

ST. AUGUSTINE.

Brandon Street	...	...	...	...	...	1	...
College Crescent	...	...	...	...	...	1	1
College Green	...	...	1	...	1	1	1
College Street	...	...	1	...	1	1	2
Colston Street	...	...	1	...	1	1	1
Elmdale Road	...	...	1	...	1	1	1
Frogmore Street	...	...	1	...	1	1	1

ST. AUGUSTINE.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhea.	Phthisis.	Pneumonia.
Hanover Street	2	1
Horfield Road	1	1
Kent's Buildings	1	1
Lower Church Lane	1	1
Lower College Green	2	1
Lower Park Row	1	...	...	...	1	1
Orchard Street	1	1
Park Place	1
Park Row	2
Park Square	1	1
Perry Road	1	...	...	...	1	1
Pipe Court	1
Pipe Lane	1	1
Queen's Parade	1
Queen's Road	1
Robin Hood Lane	1
St. George's Road	1	1
Steven's Court	1
St. Michael's Buildings	2
St. Michael's Park	1
Thatched House Lane	1	1	3
Trentham Street	2	1
Trinity Street	2
Upper Church Lane	1	...	...	...	...	1
Upper Lamb Street	1	1
Upper Mandolin Street	1
Total ...	0	5	0	0	3	20	28

BEDMINSTER.

Albert Road ...	...	...	...	...	...	...	1
Algiers Street ...	...	...	...	...	...	1	1
Allen's Square ...	...	...	...	...	...	1	1
Allington Road ...	...	...	...	...	...	1	1
Berkeley Square ...	...	1	...	...	...	...	1
Byron Terrace ...	...	...	...	...	...	...	1
Cambridge Place ...	...	...	...	...	...	1	1
Cannon Street ...	...	...	...	...	...	...	2
Catherine Mead Street ...	...	...	...	...	1	...	1
Charlotte Street ...	...	...	...	...	...	1	1
Charlotte Terrace ...	...	...	...	...	...	1	1
Clarence Road ...	...	...	...	...	...	1	1
Clarke Street ...	...	...	...	...	...	1	1
Colston Street ...	...	...	...	...	...	...	2
Cambridge Place ...	...	1	...	...	...	...	1
Coronation Road ...	...	...	...	...	1	...	1
Cumberland Road ...	...	...	...	...	...	1	1
Deanbridge Road ...	...	...	...	...	...	...	1

BEDMINSTER.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
Dean Crescent	2	...
Dean Street	1	1	1
Doveton Street	1	1	1
East Street	2	1	1
Eldon Cottages	1	1	1
Essex Street	1	1	1
Francis Place	1	1	1
Green Street	1	1	1
Greenbank Road	1	1	1
Greville Road	1	1	1
Harford Terrace	1	1	1
Hen and Chicken Court	1	...	1	1	1
Henry Street	1	1	2
Herbert Street	1	1	1
Higham Street	1	1	1
Hill Avenue	1	1	1
Islington Road	1	1	1
Jubilee Cottages	1	1	1
Jubilee Street	1	1	1
Langton Street	1	1	1
Langton Park	1	1	2
Langton Terrace	1	1	1
Lombard Street	1	1	1
Luckwell Lane	1	...	1	1	1
Maidstone Street	...	1	...	...	1	1	1
Margate Street	1	1	1
Marmaduke Street	1	1	1
Mayor Street	1	1	1
Merioneth Street	1	1	1
Mill Lane	1	1	1
Mount Pleasant Terrace	1	1	1
Murch's Buildings	1	1	1
Murray Road	1	1	1
New John Street	1	1	1
Oxford Street	1	...	1	1	1
Percy Street	1	1	1
Philip Street	1	1	1
Phipps Street	1	1	1
Princes Street	1	1	1	1
Prospect Terrace	1	1	2
Providence Place	1	1	1	1
Queen Street	1	1	1
Railway Cottages	1	1	1
St. John's Square	1	1	1
St. Luke's Road	...	1	...	...	1	1	3
St. Paul's Road	1	1	1
Sidney Row	1	1	1
Sion Road	1	1	1
Somerset Place	1	1	1
Southville Place	1	1	1
Spring Street	1	1	1
Stafford Street	1	1	1

BEDMINSTER.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever	Diarrhea.	Phthisis	Pneumonia.
Stracey Street	1
Talbot Street	1	...	...
The Marsh	1	...	...	...
The Nursery	1	...	1
Upper Sidney Street	1	...	...
Victoria Place	1	...	1
Walter Street	1	...	...	2
Waters Place	1
Weare Street	1
Wellington Street	2
West Street	1	...	...
William Street	1	...	1
Willway Street	1	1	...	...
Windmill Hill	1	1
Windsor Terrace	1	1
York Road	1	1	...	...
Total ...	0	4	3	2	17	47	44

CLIFTON.

Alma Road ...	...	...	...	...	...	...	1
Alma Vale Road ...	...	...	...	...	...	1	...
Ambra Vale, East ...	...	...	...	...	...	1	...
Ambra Vale, South ...	...	...	...	...	...	1	...
Ambra Vale, West ...	...	...	...	...	...	1	...
Avon Crescent ...	...	...	...	...	...	2	...
Bellevue Crescent ...	...	...	...	...	...	3	...
Berkeley Court ...	...	...	...	...	...	1	...
Brandon Buildings ...	...	...	...	...	...	...	1
Brunswick Place ...	...	...	...	...	...	1	...
Carter's Buildings ...	...	...	...	...	...	1	...
Clifton Wood ...	...	1	...	...	...	2	...
Clifton Wood Crescent ...	...	...	...	...	...	1	...
Crosby Row ...	...	...	...	...	1	...	...
Cumberland Basin ...	...	...	...	...	...	1	...
Dock Gates Lane ...	...	...	...	...	...	1	...
Dowry Square ...	...	...	...	...	...	1	...
Durdham Down ...	...	...	...	...	...	1	...
Freeland Cottages ...	...	...	...	...	1	...	1
Grenville Place ...	...	2	...	...	...	1	...
Halberton Terrace ...	...	1	...	...	...	...	...
Highland Court ...	...	...	...	...	...	...	1
Highland Square ...	...	...	...	...	...	1	...
Hill View ...	...	1	...	...	...	...	...
Hotwell Road ...	...	...	...	...	...	1	1
Jacob's Wells Buildings ...	...	1	...	...	...	1	...
King's Road ...	...	...	...	...	...	1	...
Litfield Place ...	...	...	...	...	...	1	...

CLIFTON.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
North Green Street	1	1	1
Osborne Road	1	1	1
Pembroke Road	1	1	1
Prinees' Place	1	1	1
Queen's Road	1	1	1
Riehmond Park Road	1	1	1
Royal York Creseent	1	1	1
Sutherland Terrae	1	1	1
The Mall	1	1	1
Thorn's Buildings	...	1	...	...	1	1	1
Tottenham Place	1	1	1	1
Victoria Street	1	1	1	1
Wellington Street	1	1	1	1
Westfield Place	1	1	1
Whiteladies' Road	...	1	...	...	1	1	1
Waterloo St. (Cottage behind)	1	1	1
Total ...	0	8	0	1	3	34	12

ASHLEY.

Albany Road	...	...	...	...	...	...	1
Albert Park	...	...	...	1	...	...	1
Ashfield Place	...	...	...	...	...	1	1
Ashfield Terrae	...	...	...	...	...	1	1
Ashgrove Road	...	...	...	...	...	1	1
Ashley Hill	...	...	...	...	...	1	1
Ashley Parade	...	...	...	...	...	1	2
Ashley Road	...	...	1	...	1	1	3
Ashley Street	...	...	...	1	1	1	1
Banner Road	...	...	...	1	1	1	1
Belmont Road	...	...	...	...	...	1	1
Belvoir Road	...	...	...	...	...	1	1
Brigstoeke Road	...	...	...	...	...	2	1
Brooklyn Street	...	...	...	...	...	...	1
Byron Street	...	...	...	...	...	...	1
Canton Street	...	...	...	...	...	1	1
Clement Street	...	...	...	...	...	2	1
Cotham Brow	...	...	...	...	...	1	1
Cotham Side	...	...	...	1	1	1	1
Cowley Street	...	...	...	1	1	1	1
Cromwell Road	...	...	...	...	...	1	1
Dalrymple Road	...	...	...	...	...	1	1
Dove Street	...	...	...	...	...	1	1
Drummond Road	...	...	...	...	...	1	1
Eldon Road	...	...	...	...	...	1	1
Freemantle Place	...	...	...	...	...	1	1
Froom Place	...	...	...	...	...	1	1
Gay Street	...	...	...	...	...	1	1

ASHLEY.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever	Diarrhoea.	Phthisis.	Pneumonia
Grosvenor Road	1	1
Hillgrove Hill	1	1
Hillgrove Placee	1	1	1
Jubilee Row	1	1
Kingsdown Parade	1	1
Magdalen Terracee	1	1
Monk Street	1	1
Montague Hill	1	...	...	...	1	1
Morley Street	1	1
Newfoundland Road	1	4	2
North Road	3	1
Orphan House	1	1
Richmond Road	1	1	2
Saint Agnes Road	1	1
Shaftesbury Avenue	1	1
Stokes' Croft Road	1	1
Southey Street	1	1
Tamworth Placee	1	...	1	...	1	1
Upper Cheltenham Placee	1	1
York Road	2	1	1
Total ...	0	4	1	3	3	44	27

ST. PHILIP.

Albert Road ...	...	...	...	...	...	...	1
Albert Placee ...	...	...	...	...	...	...	1
Albert Street ...	...	...	...	...	...	1	1
Alfred Street ...	...	...	...	...	...	...	1
Alma Street ...	...	...	...	...	...	1	1
Armoury Square ...	...	...	...	...	...	...	1
Atlas Terracee ...	...	...	...	...	1	1	1
Avonside Terracee ...	...	...	...	...	...	1	1
Avon Street ...	...	...	...	...	...	1	1
Bailey's Folly ...	...	...	...	...	...	1	1
Baptist Street ...	...	...	...	...	...	...	1
Barton Hill Road ...	...	...	...	...	...	2	1
Barton Road ...	...	...	1	...	...	1	1
Barton Vale ...	...	...	...	...	...	1	1
Bean Street ...	...	...	...	...	...	1	2
Beaufort Buildings ...	...	...	...	...	...	1	1
Beaufort Street ...	...	...	...	...	...	1	1
Beaumont Street ...	...	...	...	...	1	2	1
Bedford Street ...	...	...	...	...	...	1	1
Bouverie Street ...	...	...	...	...	...	...	1
Burgess Buildings Nursery ...	...	...	...	...	...	1	1
Canterbury Street ...	...	...	...	...	...	1	1
Chaneery Street ...	...	...	...	...	...	1	1
Charlton Street ...	...	...	...	...	...	1	1

ST. PHILIP.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhoea.	Phthisis.	Pneumonia.
Church Street, Barton Hill...							
Claremont Street ...							
Clarence Road ...							
Clifton Street ...							
Cohen's Buildings ...							
Cook's Gardens ...							
Cornwallis Place ...							
Cumberland Street							
Ducie Road							
East Buildings							
Easton Road							
Factory Street							
Fairlight Terrace							
Fleet Street							
Folly Lane							
Fox Lane ...							
Freestone Road							
Frome Place							
Gas Lane							
Gladstone Street							
Gloucester Lane							
Goat Alley							
Goodhind Street							
Goulter Street							
Graces Court, St. Jude's							
Grafton Street							
Great Ann Street							
Great George Street							
Hardinge Street							
Harleston Street							
Hemming's Parade							
Henry Street							
Horton Street							
Hulbert Street							
James Street, Mina Road							
James Street, White Street							
John Street, Easton							
John Street, Mina Road							
Kensington Park ...							
Kingsland Cottages							
Kingsland Road							
Lamb Street							
Laura Place, Newtown							
Lawford Street							
Lawrence Hill							
Lewis Street							
Little Ann Street							
Matilda Place							
Melbourne Terrace							
Meriton Street							
Meyrick Street							

ST. PHILIP.—Continued.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhea.	Phthisis.	Pneumonia.
Midland Road	1	...	...	...
Mina Road	2	...	...
Mina Terracee	1	...	...
Morley Terrace	2	1	...
New Amberley Terrace	1
New Street	1	...	...
Old Amberley Street	1	1	...
Old Broad Street	1	...	2
Old Cheese Lane
Oxford Street	1	...	...	1	...
Packhorse Lane
Park Row	1	...	...
Park Street	1	1
Parson's Street	1	...	...
Pearee's Buildings	1	1
Peel Street	1	...	...
Penfield Street	2
Penywell Road ...	1	1	...	...	3	...	...
Perry Street	1	...	...
Philip Street	1	...	...	...	...	...
Pinnell Court	1	...	...
Pratten's Court	1	...
Queen Victoria Street	1
Ranelagh Street	1	...	2	...
Regent Street	2	...	...
Regent Terracee, Newtown	1	...	...
Richmond Road	1	1	...	...	...
Riehmond Street	2	...	2
Rieh's Lane	1
St. Werburg's Park	1
Sandbed Lane	1	...	...
Sidney's Alley	1	...	...
Sidney Street	1
Sion Road	2	...	...
Stanley Street	1	...	...
Stanhope Street	1
Stapleton Road	4	...	...
Stuart Street, Barton Hill	1
Tucker's Court, Old Bread St.	1	...	1
Tyler Street	3	...	...
Union Road	1
Wade Street	1
Waterloo Lane	1	...	...	...	...	1
Waterloo Terracee
West Street	2	...	1
Winstanley Street	1	...	...	1
York Street, Mina Road
Total ...	0	4	4	5	9	91	69

WESTBURY.

Name of Street.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Diarrhea.	Plthsis.	Pneumonia.
Aberdeen Terrace ...							1
Albert Road, Westbury Park							
Alfred Place, Kingsdown ...							
Berkeley Road ...							
Bindon Place							
Chandos Road							
Clavering Road							
Clyde Road							
Collingwood Road...							
Cotham Hill							
Culver Street							
Elm Lane							
Eltoe Road							
Fernbank Road						1	
Hampton Park							
Hampton Road						1	
Lansdown Road							
Oakland Road							1
Oxford Street						1	
Portland Street							1
Redland Park	1						
Redland Road					1		
Ravenswood Road...		1					1
St. Ronan's Avenue							
Stanley Road							1
Southampton Parade						1	
Victoria Road ..							1
Waverley Road ...					1		
Woolcott Park ...							1
Total ...	0	2	2	0	1	10	19



PART IV.

*** Meteorological Observations at Clifton College.
1891.**

(230 Feet above Mean Sea Level).

January.—The mean temperature for this month was 35.75 degs. F., $3\frac{1}{2}$ degs. below the average. This deficiency was due to the extremely cold weather in the beginning of the month, the mean daily temperature being below the normal until the 22nd, after which it was above the normal. The minimum temperature on the ground was below freezing point every day till the 23rd. The mean daily temperature was below freezing point on 13 days. The lowest temperature observed was 15.2 degs. F., on the 19th, this temperature being registered on both exposed and screened thermometers.

During the whole of the cold period the barometer was above 30 inches ; it fell rapidly from the 19th till the 21st ; on the 23rd there was a slight fall of the barometer accompanied by an extremely heavy fall of rain, 1.850 inches being measured on the morning of the 24th.

February.—During this month the temperature was nearly normal. The most notable deviation was on the 20th, the mean temperature on that day being 33 degs. F., or 8 degs. below the normal. The mean temperature for the month was 42 degs. F. There was frost on the ground on 14 days out of the 28.

The barometric pressure remained very high during the whole month, falling below 30 inches on only one day, the 26th. The most noteworthy feature of the weather was the complete absence of rain.

* I am indebted to Mr. RINTOUL of Clifton College, and to the late Dr. BURDER for these returns.

March.—The mean temperature of this month was 39·6 degs. F., as compared with the normal value 41·76 degs. F. The mean daily temperature was below the normal from the 8th till the 24th, falling below freezing point on the 10th and 12th. On the 10th the highest temperature registered was only 30 degs. F. There was frost on the ground on 16 days.

There was a period of high barometric pressure ending on the 6th, followed by variable pressure for the rest of the month. On the 10th and 11th there was a heavy fall of snow, yielding when melted .715 inches in the rain gauge.

April.—The mean temperature for the month was 44·86 degs. as compared with the normal value 44·14, so that the mean temperature was higher than the average by .72 deg. The highest temperature recorded was 59·9 degs. on the 27th, and the lowest in the shade was 31 degs. on the 1st. There was frost on the ground on four days, the lowest temperature on the ground being 25·7 degs. on the 1st.

The barometer was low at the beginning and end of the month, and was above 30 inches from the 8th till the 26th.

May.—The mean temperature was 50·03 deg., which is 1·95 degs. below the average. This deficiency was due to a period of cold weather extending from the 16th till the 28th. On the 11th, 12th, and 13th there was an exceptionally high temperature, the maximum thermometer registering 71·3 degs., 76·5 degs., and 76·1 degs. respectively on those days. The mean temperature fell continuously from its highest value 64·5 degs. on the 13th, to its lowest 39·8 degs. on the 18th. The lowest temperature recorded on the ground was 32·2 degs. on the 17th. The weather became steadily warmer till the end of the month, when the mean temperature was 56·7 degs.

The barometer was very unsteady during the whole of the month, and there were only nine days on which some rain did not fall.

June.—The mean temperature for the month was 60·12 degs., or 1·2 degs. above the average. The highest temperature recorded

was 77 degs. on the 19th, and the lowest temperature in the shade 44.5 degs. on the 10th. There was a severe thunderstorm early in the morning of the 25th, accompanied by a heavy fall of rain.

The barometer was below 30 inches from the beginning of the month till the 8th, and from the 23rd till the end of the month. There was only one considerable fall of rain besides that on the 25th, namely, on the 4th, when .60 inches were measured.

July.—The mean temperature for this month was 59.89 degs. F., being 1.23 degs. F. below the average of the last ten years. The highest temperature was 74.3 degs. F. recorded on the 16th, and the lowest on the screen was 49.4 degs. F. on the 12th.

The barometer was unsteady during the whole of the month, and there were 17 rainy days, with an aggregate fall of 3.087 inches.

August.—The mean temperature for this month was 58.27 degs. F. as compared with an average the last ten years of 59.89 degs. F., showing a defect of 1.62 degs. The temperature was very uniform, there being no periods of weather much hotter or colder than the normal. The highest temperature noted in the shade was only 68.6 degs. F. on the 14th, and the lowest 44 degs. F. on the 22nd.

The barometer was low and very unsteady during the whole of the month. There were 6.806 inches of rain, and 21 rainy days. On the 3rd there was measured a fall of 1.050 inches, and 1.390 inches on the 21st.

September.—The mean temperature was 58.68 degs. F. as against an average for the last ten years of 56.55 degs. F., and therefore higher than the average by 2.13 degs. F. The temperature was above the average on all but five days, and very much above it on seven days from the 8th to the 14th inclusive. The highest temperature in the shade was 79.1 degs. F. on the 12th, and this is the highest temperature recorded in the year. The lowest temperature on the screen was 46 degs. F. on the third.

There were 18 rainy days, with an aggregate fall of 2.378 inches.

October.—The mean temperature of the month was 50.34 degs. F. as against 48.86 degs., which is the normal value. This excess of temperature was maintained steadily during the whole month, with the exception of the last three days. The variations in temperature, whether in any one day or from day to day, were comparatively slight, and the general characteristic of the month, as regards temperature, was the equable warmth which prevailed. This mild weather was produced by a succession of deep disturbances, which swept over the British Isles, and produced high winds and heavy rainfall. Thus the variations of barometric pressure were very great and rapid. There were 23 rainy days, with an aggregate rainfall of 8.716 inches. The heaviest falls were on the 6th and 18th, when 1.130 and 1.240 inches of rain fell; and these heavy falls were accompanied by a rising barometer.

November.—This month was colder than usual, the mean temperature being 42.83 degs. F., as compared with the average value 44.68 degs. The temperature was above the average for 12 days, from the 10th to the 22nd, and well below it for the last week. There was frost on 8 days, the lowest air temperature recorded being 28.2 degs. on the 25th, and the lowest temperature on the ground 26.0 degs. on the 8th.

The barometric pressure was low for the greater part of the month, and on the 11th the extraordinarily low reading of 28.356 inches was recorded. There were 16 rainy days, with an aggregate rainfall of 2.626 inches.

December.—The mean temperature for December was 41.26 deg. F., the normal being 39.47 degs. From the 1st till the 16th the temperature was well above the normal. This period of mild weather was followed by 10 days of frost, during which the air temperature fell as low as 21 degs. on 3 days (22nd, 23rd, and 24th). The mean daily temperature was below freezing point from the 20th till the 24th, and the thermometer failed to rise as high as freezing point from the 21st to the 24th. On the last five days of the month the temperature was above the average.

The barometer was very unsteady for the first fortnight of the month, it then rose and remained high and steady during the period of cold weather. There were 18 rainy days and 4.105 inches of rain.

D. R.

Rainfall of 1891.

WEEK ENDING.	RAIN. INCHES.	WEEK ENDING.	RAIN INCHES.
January 10	0.099	July 18	0.073
„ 17	0.002	„ 25	0.225
„ 24	2.633	August 1	0.446
„ 31	1.027	„ 8	1.637
February 7	0.003	„ 15	0.582
„ 14	nil	„ 22	2.501
„ 21	nil	„ 29	1.985
„ 28	nil	Sept. 5	0.939
March 7	0.381	„ 12	0.313
„ 14	1.053	„ 19	0.718
„ 21	0.860	„ 28	0.542
„ 28	0.443	October 3	0.617
April 4	0.825	„ 10	2.461
„ 11	0.186	„ 17	3.021
„ 18	0.065	„ 24	2.553
„ 25	nil	„ 31	0.253
May 2	0.919	Nov. 7	0.003
„ 9	1.192	„ 14	1.561
„ 16	0.114	„ 21	0.439
„ 23	1.777	„ 28	0.484
„ 30	0.986	Dec. 5	0.605
June 6	0.622	„ 12	1.505
„ 13	0.011	„ 19	1.292
„ 20	0.012	„ 26	1.203
„ 27	1.607		
July 4	1.470	1892.	
„ 11	1.198	May 2	1.029

Rainfall in Bristol in 1891.

MONTHLY SUMMARY.

	Inches.	Average of 38 Years.	Departure from Average.	Number of days on which 1 in. or more fell.
January ...	3.830	3.212	+ 0.618	15
February ...	0.003	2.213	- 2.210	0
March ...	2.797	2.252	+ 0.545	15
April ...	1.228	2.117	- 0.889	9
May ...	3.778	2.399	+ 1.377	19
June ...	2.319	2.551	- 0.232	13
July ...	3.186	3.051	+ 0.135	15
August ...	7.439	3.410	+ 4.029	22
September	3.328	3.238	- 0.910	18
October ...	8.494	3.561	+ 4.933	22
November ...	2.494	3.050	- 0.559	14
December ...	4.627	2.834	+ 1.793	20
	42.521	33.888	+ 8.633	182

The year 1891 stands third in order of wetness in a series of 39 years, the total rainfall having been about $42\frac{1}{2}$ inches. In the year 1875 we had 44 inches; and in 1882 over 48 inches. The two months which chiefly contributed to swell the total of the past year were August and October; these months being, with a single exception, the two wettest months recorded. Roughly, it may be said that in August the fall was $7\frac{1}{2}$ inches, and was 4 inches above the average; in October, the fall was $8\frac{1}{2}$ inches, and was 5 inches above the average. On the whole year, the excess was 8.6 inches, and it is singular to note how very nearly this excess balances the defect of 1890, which was something under 9 inches. It is also curious to observe how comparatively small is the differ-

ence between the two years in the number of rainy days, notwithstanding the extremely large difference in the total amount of rain. In 1890, with a total of 25 inches, the number of days on which rain fell to the amount of a hundredth of an inch or more, was 175 ; in 1891, with a total of $42\frac{1}{2}$ inches, the number of such days was 182. Two circumstances combine to explain this apparent anomaly. In 1890, notwithstanding the small total, the weather was frequently unsettled and showery. In 1891, notwithstanding the large total, there was scattered through the year a very fair number of dry periods. In proof of this, it may be stated that an analysis of the year's record shows the following 10 periods of dry weather, the figures indicating the number of consecutive days during which the weather was quite rainless, or very nearly so : 33, 19, 13, 12, 10, 9, 9, 6, 6, 5. The drought of 33 days occurred in February, and the first 5 days of March ; that of 19 days in June ; that of 13 days in April, and that of 12 days in October and November. The shorter dry periods occurred respectively in January, July, December, September, November, and May. Wet days, as a rule, have a more lasting impression on the mind than dry days. It is likely, therefore, that some persons will be surprised to be told that the number of dry days last year exceeded the number of rainy days ; even using the term "rainy" in its meteorological sense of an hundredth of an inch of rain. In the year 1882 the number of rainy days was 204.

Apart from the snow which lay on the ground at the opening of the year, the only snow of importance in the year was that which fell in the memorable "blizzard" of the 9th and 10th March. This storm was much more severely felt in Devonshire and Cornwall than in this neighbourhood ; and Railway communication between Plymouth and London was entirely suspended for fully 4 days. Nothing like this interruption of Railway traffic had ever before been experienced in the Southern parts of England. Here the average depth of snow, when the fall ceased, was about 9 inches, and drifts of 2 feet were common.

GEORGE F. BURDER, M.D.

Meteorology for the 52 Weeks ending 2nd January, 1892.

Height above Mean Sea Level—250 feet.

1891.	BAROMETRIC PRESSURE at 32° and Sea Level				Mean Temperature	Highest Mean Daily Temperature	Lowest Mean Daily Temperature	Max. Temperature in Shade	Min. Temperature at 8 ft above ground	Mean Daily Range of Thermometer	Greatest Daily Range of Thermometer	Smallest Daily Range of Thermometer	Mean Humidity	Grains of Vapour in a cubic ft. of air	Prevalent Wind.	
	Mean	Highest	Lowest													
Jan.	10	30.26	30.56	30.03	30.82	37.5	26.8	42.2	20.5	18.9	9.6	15.5	4.4	91	1.78	Variable
	17	30.57	30.72	30.20	33.13	39.05	28.25	44.1	22.5	22.9	12.3	17.2	9.7	85	1.06	N.
	24	29.88	30.48	29.52	35.9	45.95	24.8	49.8	15.2	14.3	14.3	27.8	4.1	87	2.27	W.
	31	29.95	30.11	29.79	45.93	49.75	42.45	54.7	37.7	31.4	8.8	11.1	6.5	88	3.09	S.W.
	7	30.58	30.74	30.25	42.86	45.5	40.25	50.3	34.4	28.9	8.5	12.4	5.6	91	2.85	N.W.
	14	30.44	30.67	30.31	40.88	44.3	37.5	51.5	30.5	26.5	12.1	19.5	2.9	87	2.40	W.
Feb.	21	30.56	30.71	30.28	40.02	46.55	33.0	53.0	29.0	27.4	16.4	27.3	6.6	88	2.15	E.
	28	30.27	30.50	29.95	44.18	48.15	40.45	63.1	29.6	25.3	22.7	29.9	18.1	86	2.21	S.E.
	7	30.20	30.42	29.74	44.91	48.2	41.75	52.1	35.0	29.9	7.8	13.5	2.3	88	2.99	N.W.
	14	29.66	29.87	29.41	33.24	37.30	28.65	41.2	21.6	18.3	8.9	16.1	2.2	89	1.95	N.E.
	21	29.69	29.96	29.28	38.35	41.5	35.2	46.2	28.2	23.7	10.1	14.0	6.7	86	2.46	E.
	28	29.85	30.04	29.66	40.1	46.7	32.9	53.0	29.2	26.3	11.2	19.3	5.4	81	2.37	N.W.
March	7	29.79	30.08	29.56	42.55	46.75	39.55	54.3	29.7	25.1	15.24	22.8	8.7	77	2.51	S.E.
	14	29.87	30.14	29.14	43.24	48.3	40.25	53.3	32.0	28.9	10.1	17.7	3.8	79	2.64	E.
	21	30.22	30.36	30.05	44.76	48.15	41.2	57.0	32.3	29.3	14.35	19.5	8.0	78	2.73	Variable
	28	29.85	30.04	29.66	40.1	46.7	32.9	53.0	29.2	26.3	11.2	19.3	5.4	81	2.59	E.
	4	29.79	30.08	29.56	42.55	46.75	39.55	54.3	29.7	25.1	15.24	22.8	8.7	77	2.51	S.E.
	11	29.87	30.14	29.14	43.24	48.3	40.25	53.3	32.0	28.9	10.1	17.7	3.8	79	2.64	E.
April	18	30.22	30.36	30.05	44.76	48.15	41.2	57.0	32.3	29.3	14.35	19.5	8.0	78	2.73	Variable
	25	30.20	30.30	30.07	45.0	47.5	43.5	56.7	36.6	33.1	14.4	17.7	6.9	78	2.59	E.
	2	29.72	30.02	29.51	49.7	53.7	45.0	59.9	35.4	33.4	13.9	24.5	5.4	84	3.47	S.W.
	9	29.91	30.13	29.58	51.03	52.8	48.2	64.8	40.8	38.4	15.9	24.0	11.5	80	3.19	Variable
	16	30.01	30.23	29.79	55.6	64.6	45.0	76.5	41.1	39.3	16.9	29.5	7.8	75	3.40	N.
	23	29.60	29.75	29.34	44.26	46.9	39.9	56.3	34.2	32.2	12.4	17.6	6.0	81	2.80	Variable
May	2	29.72	30.02	29.51	49.7	53.7	45.0	59.9	35.4	33.4	13.9	24.5	5.4	84	3.47	S.W.
	9	29.91	30.13	29.58	51.03	52.8	48.2	64.8	40.8	38.4	15.9	24.0	11.5	80	3.19	Variable
	16	30.01	30.23	29.79	55.6	64.6	45.0	76.5	41.1	39.3	16.9	29.5	7.8	75	3.40	N.
	23	29.60	29.75	29.34	44.26	46.9	39.9	56.3	34.2	32.2	12.4	17.6	6.0	81	2.80	Variable
	30	29.68	29.79	29.50	48.5	51.95	44.65	61.4	40.8	39.5	11.4	18.9	2.7	78	3.04	W.
	6	29.82	29.95	29.65	59.27	64.2	55.65	73.1	49.0	47.0	16.6	23.3	10.9	78	4.30	S.E.
June	13	30.11	30.40	29.92	56.16	59.05	50.45	70.3	44.5	42.9	16.1	23.3	8.1	72	3.56	N.E.
	20	30.24	30.34	30.03	61.33	66.25	56.35	77.1	50.8	48.5	15.5	21.7	11.5	78	4.69	Variable
	27	29.95	30.30	29.81	62.23	65.15	59.2	73.8	49.6	49.1	15.3	20.6	9.3	79	4.86	N.E.
	4	29.85	30.01	29.75	60.22	63.05	57.05	70.0	50.5	48.0	11.0	13.9	5.2	76	4.50	S.W.
	11	29.91	30.15	29.68	58.51	60.35	56.55	67.8	51.5	49.6	10.67	15.3	5.5	82	4.49	N.

Meteorology for the 52 Weeks—Continued.

Height above Mean Sea Level—250 feet.

K² 3

TABLE OF DEATHS during the Year 1891, in the Urban Sanitary District of Bristol, classified according to DISEASES, AGES, and LOCALITIES

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities.	Mortality from all causes, at subjoined ages.							Mortality from subjoined causes, distinguishing Deaths of Children under 5 years of Age.																						
	At all ages.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 60	60 and upwards	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	Smallpox.	Scarlatina.	Diphtheria	Measles.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing	Puerper.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Brachycephalic Fever.	A. gue.	Phthisis.	Bronchitis, Pneumonia and Pleurisy.	Heart Disease.	Injuries,	All Other Diseases.	TOTALS.
Saint Mary Redcliff	202	59	32	3	2	56	50	Under 5 5 upwds.				1	1					12	1	5					15	15	5	58	91	
Castle Precincts	107	22	8	2	8	37	30	Under 5 5 upwds.										2	1	4					5	10	15	7	111	
Saint Paul	348	77	49	10	13	90	109	Under 5 5 upwds.	2			1	3				1	7	3					40	2	3	68	126		
Saint James	133	37	14	3	3	35	41	Under 5 5 upwds.	2								7	2	2					15	10	29	7	51		
Saint Augustine	256	53	24	9	16	74	80	Under 5 5 upwds.	4			1		1			7		2					23	20	36	21	59		
Bedminster	901	279	205	41	29	177	170	Under 5 5 upwds.	4	3							1	116	33	15					5	106	3	196	484	
Clifton	436	61	50	8	14	104	199	Under 5 5 upwds.	6			1		1			19	3	3					3	34	61	48	5	170	
Ashley	365	68	21	28	18	109	121	Under 5 5 upwds.	4			1					3	5	3					21	44	62	35	2	51	
Saint Philip	868	251	135	30	46	210	196	Under 5 5 upwds.	4	3	1	1					1	1						13	2	45	7	126	386	
Westbury	200	19	8	10	7	49	107	Under 5 5 upwds.	1	1							3	1	1					10	78	135	43	23	175	
Royal Infirmary	214	19	19	11	21	105	39	Under 5 5 upwds.				3					1							7	16	21	20	26	176	
General Hospital	175	6	13	13	18	102	23	Under 5 5 upwds.		2	1						1		1					4	12	22	18	21	76	
Children's Hospital	44	6	19	17			2	Under 5 5 upwds.		1	1						7							5	1	4	1	10	19	
Saint Peter's Hospital	8	5					3	Under 5 5 upwds.									..							3				3	5	
Small Pox Hospital								Under 5 5 upwds.																					2	
Fever Hospital...		2		2				Under 5 5 upwds.		2																			4	
Bristol Union Workhouse...	154	3	4		2	39	106	Under 5 5 upwds.				1					1	1						8	2	4	13	2	116	
Barton Regis do do	143	6		3	2	59	73	Under 5 5 upwds.																20	23	9	2	83	137	
Long Ashton do do	28	1			3	7	17	Under 5 5 upwds.																2	2	1	1	21	27	
Lunatic Asylum	47					2	35	10	Under 5 5 upwds.															7	3	1	1	35	47	
TOTALS	4631	972	603	188	204	1293	1371	Under 5 5 upwds.	29	10	3	2					3	229	52	48					21	393	6	26	753	1575
									8	2	1	21					9	1	10	11					361	626	352	130	1507	3056

The subjoined numbers have also to be taken into account in judging of the above records of mortality.

K²11
(B). Table of Population, Births, and of New CASES of Infectious Sickness, coming to the knowledge of the Medical Officer of Health, during the year 1891, in the Urban Sanitary District of Bristol; classified according to DISEASES, AGES, and LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.	Population at all Ages Census, 1891. (Unrevised)	Registered Births (b)	New Cases of Sickness in each Locality coming to the knowledge of the Medical Officer of Health.													Number of such Cases Removed from their Homes in the several localities for treatment in Isolation Hospital.														
			Aged under 5 or over 5.		1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11	12	13
			(c)	(d)	Small Pox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas	Small Pox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.				
(a)																														
St. Mary Redcliff H ...	9,295	299	Under 5	6	3																									
		5 upwds.	13	2					15																					
Castle Precincts	5,584	114	Under 5	6					2																					
		5 upwds.	6																											
St. Paul	19,036	610	Under 5	18	1			1																						
		5 upwds.	38	2	2			4																						
St. James H	7,831	228	Under 5	8																										
		5 upwds.	19	1				4																						
St. Augustine H	13,795	352	Under 5	20																										
		5 upwds.	61	4				6																						
Bedminster H	45,622	171	Under 5	40	4			3																						
		5 upwds.	10	118	3			26																						
Clifton	29,345	577	Under 5	54				2																						
		5 upwds.	133	9				11	1	1																				
Ashley	24,051	648	Under 5	28	1			1																						
		5 upwds.	68	11				7																						
St. Philip H	51,624	1844	Under 5	61	5	4		3	3																					
		5 upwds.	3	107	1	2		22	3																					
Westbury	15,482	256	Under 5	16	1			1																						
		5 upwds.	64	13				5	1																					
Bristol General Hospital ...			Under 5																											
Bristol Royal Infirmary ...			5 upwds.					2																						
Children's Hospital...			Under 5					2																						
St. Peter's Hospital ...		34	Under 5																											
Small Pox Hospital...			5 upwds.																											
Fever Hospital			Under 5																											
Bristol Union Workhouse ...		17	Under 5																											
Barton Regis Workhouse ...		23	Under 5																											
Long Ashton Workhouse ...		12	Under 5																											
Lunatic Asylum			Under 5																											
Totals...	221,665	6725	Under 5	239	16	4		11	3																					
			5 upwds.	14	629	45	5	106	5	11	126																			

Notification of Infectious Disease has been compulsory in Bristol since February 12th, 1890. Only those Diseases Scheduled in the Act are at present Notifiable. The Isolation Hospitals used by the Sick of the District are :-

NAME OF HOSPITAL.	DISEASES ISOLATED.												DISTRICT WHERE SITUATED.													
1.—Sanitary Authority's Hospital
2.—Guardians' Hospital
3.—Barton Regis Guardians' Hospital
4.—Bedminster Guardians' Hospital
5.—Children's Hospital
6.—Bristol General Hospital
7.—Royal Infirmary

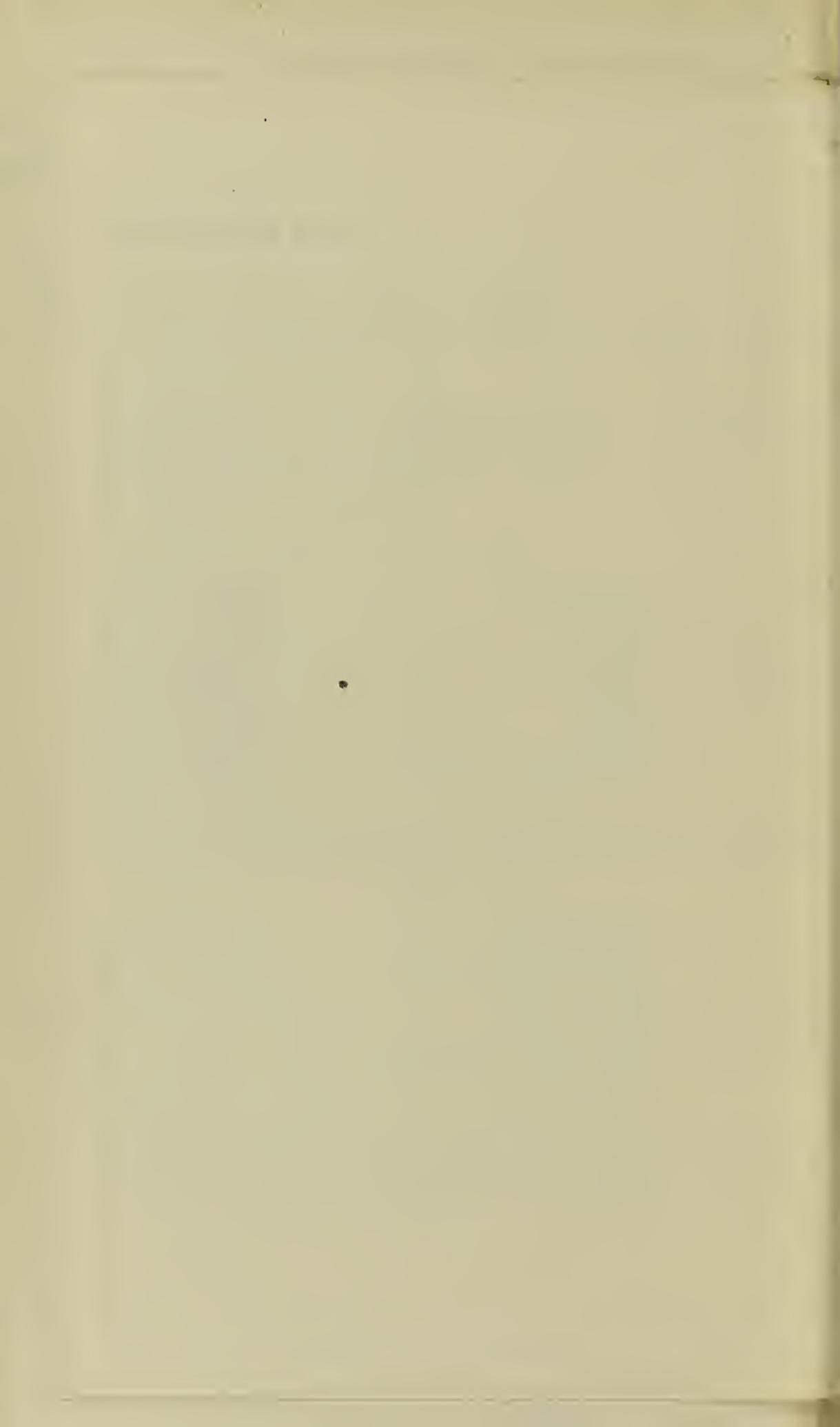
Diphtheria is, as a rule, only admitted into Public Institutions in cases where operation is necessary.

ANALYSIS OF DEATHS REGISTERED IN THE CITY AND COUNTY OF BRISTOL,

1060

DURING THE YEAR 1891, ENDING SATURDAY, 2nd JANUARY, 1892.

The average age at Death of Persons aged 60 years and upwards was 72 years and 5 months. The Births of 198 Illegitimate Children were registered this year, and the Deaths of 52. Average Death Rate for 10 Years, 18·79. Death Rate for last year, 19·20



PART V.

BRISTOL PORT SANITARY AUTHORITY.

REPORT OF THE MEDICAL OFFICERS OF HEALTH
AND OF THE CHIEF PORT INSPECTOR OF
NUISANCES FOR THE YEAR 1891

*To THE CHAIRMAN AND MEMBERS OF THE
BRISTOL PORT SANITARY AUTHORITY.*

February, 1892.

GENTLEMEN,

The Bristol Port Sanitary district includes the three widely separated Docks of Bristol, Avonmouth and Portishead, together with the anchorage of Kingroad ; the distance from the centre of the City to the furthest dock (Portishead) being upwards of twelve miles.

The Port Sanitary Authority is the Town Council. The Local Government Board have not, as yet, carried out their expressed intention of constituting this Authority permanently as a Port Authority, so it is continued as a temporary Authority by Orders renewed from year to year.

In August, the Resident Inspector at Avonmouth Hospital resigned his appointment, and, in supplying his place, it was considered advisable that the Port Inspector at Avonmouth should not be resident in Hospital, so that in the event of infectious sickness being in the Hospital, he might continue his work amongst the shipping without any fear of conveying infection.

ALBERT DICKENS, who had for five years served as your Authority's Boatman, and had assisted Inspector Mayne in his duties, was appointed to the post of Port Sanitary Inspector ; and JAMES REX was at the same time appointed Hospital Caretaker and Assistant Inspector and Boatman.

An arrangement was also made during the year to retain the services of a Nurse for the Hospital—so that upon the shortest notice her services are always available.

In September, certain alterations for the improvement of the Port Hospital at Avonmouth, which your Committee had decided were necessary for the comfort and efficiency of the Hospital, were satisfactorily completed. These included some structural alterations designed to more fully cut off the air connection of the w.c.'s with the wards, the lowering of certain windows in each ward to allow of an outlook, the provision of stoves for warming the large wards, and of water heaters for the baths, and sundry other minor alterations.

PROPOSED AMENDMENT OF THE LAW RELATING
TO SANITARY PROVISIONS IN SHIPS.

In response to the invitation of the Hull and Goole Port Sanitary Authority, the Council, acting as the Port Sanitary Authority, adopted in November last, upon the recommendation of your Committee, the following Memorial; and ordered the City Seal to be affixed thereto, and the Memorial to be presented to the Board of Trade. A further provision (3) contained in the original Memorial as forwarded by the Hull and Goole Authority, and making the provision of bath and lavatory accommodation on board ship compulsory, was considered inexpedient by your Committee, and was accordingly not included in their recommendation to the Council.

TO THE BOARD OF TRADE.

THE MEMORIAL of the Mayor, Aldermen, and Burgesses of the City of Bristol, being the BRISTOL PORT SANITARY AUTHORITY, under their Common Seal,

HUMBLY SHEWETH,

1. THAT YOUR MEMORIALISTS, AFTER HAVING representations made to them by their officers, are of opinion that the present

cubical space for seamen and apprentices on board ships, fixed by Sec. 231 (2) of the Merchant Shipping Act, 1854, namely, 72 cubic feet, is insufficient for the health and well-being of the seamen, as the confined breathing space leads to the accumulation of foul air, which, in our opinion, acts deleteriously upon their general health.

2. THAT YOUR MEMORIALISTS ARE ALSO OF OPINION that all iron work in the seamen's quarters on board ships should be covered in so as to avoid dampness to the bedding, clothing, &c., caused by the sweating of the iron decks of the forecastle, &c.

YOUR MEMORIALISTS therefore humbly pray that your Board will be pleased to introduce into Parliament a Bill amending the Merchant Shipping Act, 1854, by increasing the cubic space, and making the covering in of all iron work in seamen's quarters compulsory.

AND your Memorialists will ever pray, &c.

REPORT OF THE CHIEF PORT INSPECTOR ON SHIP INSPECTION IN 1891.

The work of Ship Inspection has been successfully carried out on the same lines adopted in previous years, with the result that 1,322 ships were inspected, which was an increase of 78 ships as compared with the year 1890; and comprised 536 steam boats and 786 sailing vessels, of which 1162 belonged to British Owners, and the remaining 160 sailed under various Foreign flags, but the majority hailed from Norway.

Again the inspections have resulted in the discovery of a large number of defects of various kinds, and as many as 28 per cent. of the ships examined came under the default list, which is about the same proportion found in the previous year, but these defects were not of so serious a character in respect of ventilation and lighting, as only 39 and 17 respectively came under notice, compared with 62 and 38 last year, and the number of these

contraventions is likely to be much reduced as Sanitary Inspection becomes general, and better forms of construction and improved regulations are adopted.

Altogether 610 insanitary conditions were found, and in dealing with these, 439 notices were given with the best result yet obtained during the five years the work has been carried on--as 83 per cent. of these notices are known to have been complied with, and it is very likely that many more were complied with, but as the work was done after the vessels left, there are no means of getting at the facts.

As in previous years, leakage through decks, fittings, ports, etc., were a fruitful cause of nuisance, and 114 cases were found as against 94 in the previous year, but probably the extremely bad season experienced had much to do with the matter, and some of these defects are unavoidable by reason of the construction of the ships and the strains the work is subjected to.

But another nuisance which is frequently found could be prevented, viz., the dampness caused by condensation of water on the inner surface of berths made of iron, of which many of the living spaces are constructed.

The tops and sides of these places often become streaming wet with water, which makes everything in the space damp and wet, and must have a bad effect on the health of the inmates, and this condition is aggravated by the fact that when this nuisance is often at its height a fire cannot, by reason of bad weather, be lighted, as all apertures have to be closed to keep out sea water.

The excuse often made that the iron rusts behind casings, and that many surveyors object to casing on these grounds, could be easily got over, as the iron when clean could be coated with a thick coat of asphalte or some other suitable material, which would reduce rusting to a minimum, then the living spaces could be cased out and packed between, if necessary, thereby securing a dry habitable place for the men.

I think the Authorities should insist on some method of the kind being adopted in all new ships and those undergoing survey.

The question of space and other accommodation requires careful consideration from the Authorities and Owners, and the old space allowance of 72 cubic feet (fixed when vessels were small and mostly of wood) could easily be increased without disadvantage to the ship or much extra cost in the ships as now constructed, though it is mostly in the older vessels that want of space is noticeable. I think the system of one bunk above another should be altered, each man should have the space 6×2 from the floor to the deck above, with a drawer and locker under the bunk for his clothes and effects, with a seat in front and a proper division between each bunk, so that a man may not have his head closely adjoining his next neighbour's feet.

In "weekly boats" a larder or mess room should be provided, so that provisions could be decently kept, and not, as is now often seen in the bunks, hung up amongst sea boots, oil skins, etc., the place having the appearance of a huckster's shop combined with an old clothes store.

In but few boats is there a place where the men can wash themselves except in the limited living space—so firemen and seamen generally turn in soot, coal dust, oil, and all, without washing from the commencement of the trip to the finish.

There also is no hospital accommodation provided, except in rare cases.

The action of Sanitary Authorities in respect of water closets and paint and oil lockers in contiguity with forecastles has had good effect, though there are some of the older boats where much improvement could yet be made; but as there are no powers unless a positive nuisance exists, the law requires altering on this point as to construction and position in the first instance.

Want of systematic cleaning and painting are about the most numerous defects found, but there was an improvement noted as compared with the earlier days of inspection work. The ships' officers also take more interest generally in the work since the vessels are regularly inspected on arrival in Port, but much indifference in this respect is still found in some ships amongst the men, and they complain of not being allowed time to do the cleaning work, and refuse to do it in their own time.

In respect of drinking water, and the condition of the vessels used to contain it, a great improvement has taken place since the importance of the matter has been pressed on the notice of the captains—and it is seldom found that a British Captain takes in a doubtful supply, and the Foreign Masters are discontinuing the practice where possible.

S. O. DIMOND,
Chief Port Inspector of Nuisances.

INFECTIOUS AND OTHER DISEASES ON VESSELS

ARRIVING DURING THE YEAR 1891.

SMALL POX—

On the evening of Saturday, 24th January, at about 11 p.m., notice was received from the General Hospital that a boy, J. M., aged 17, cook on the Schooner "Flying Foam," which arrived on that night's tide, eight days out from Oporto, had applied at that Institution, and was found to be suffering from Small Pox, and to have been ill about one week. The vessel had been duly boarded by the Customs' Officers in the river, but the captain had denied the existence of any sickness, and it was found impossible to establish the fact that he knew of the nature of the illness. The patient was at once visited and was removed the same night in your Authority's Ambulance to the Avonmouth Port Hospital, where he arrived at 2 a.m. on Sunday morning, 25th January; the vessel and the patient's belongings were disinfected on the same day.

The crew consisted of five, all told ; two of whom showed marks of previous vaccination, the patient and the remaining two showed, however, no such marks. Re-vaccination of the two latter was secured on January 26th, but in three days' time, *i.e.*, on the 29th (or four days before the vaccination vesicle had time to mature) one of these—V. E. 38—Seaman, who had constantly nursed the boy, sickened of the disease, which he must have contracted about seven days before the vessel's arrival. He was at once removed to the Port Hospital at Avonmouth, where both patients made a good recovery. The course of V. E.'s illness was materially modified by the concurrent occurrence of Vaccinia with Small Pox ; not only was maturation of the vesicles hastened, but the secondary fever was considerably lessened. Upon the removal of this case to hospital, the vessel was a second time disinfected, and re-vaccination of the rest of the crew, who had before objected, was secured. No further cases resulted.

ENTERIC FEVER—

On Thursday April 9th, the Greek S.S. ΔΕΣΠΟΙΝΑ. Γ. ΜΙΧΑΛΙΝΟΥ. arrived from Smyrna *via* London and Hull. On arriving at Hull, on April 2nd, a boy, who had been ill about five days, died, apparently from Enteric Fever, before he could be removed to Hospital. We were advised by the Port Medical Officer of Health for Hull, that all necessary precautions as to disinfection had been carried out. On arrival at Bristol the vessel was visited, and two men were found to be sick, apparently not of any infectious fever : they were attended by a private medical attendant. Instructions were given as to cleansing the forecastle, and the water, which had been obtained at Smyrna, was replaced by the Local Supply.

On May, 21st, the Italian Barque "Speranza" from Rosario (River Plate) arrived, and in one week after arrival a seaman developed Enteric Fever, and was removed on 27th to the Royal Infirmary, where he died. Disinfection was carried out, and the water replaced by the Local Supply. No further cases resulted.

On December 28th, the Norwegian Barque "Dagmal," from Savannah, with Turpentine, was visited. The vessel left port on

November 16th. On December 3rd the first mate sickened and died after nine days' illness, apparently of Enteric Fever—he was buried at sea on the 15th December. No further sickness occurred, and the rest of the crew was well on arrival. The water had been obtained from the water boat at Savannah. All necessary precautions of disinfection were taken with the berth and clothes.

AGUE—

On February 23rd, the Barque "Augusta," from Demerara, arrived with a man on board convalescent after Ague—the rest of the crew well. The water was changed, and cleansing secured.

On October 23rd, the Norwegian Barque "Brodrene," 37 days out from Savannah, arrived with one man sick on board. O. F., aged 40, who had been ill three weeks, and was admitted to the General Hospital, suffering from the results of an attack of Ague. On the passage three others of the crew had suffered from "sickness and fever" for periods varying from six to fourteen days, but were convalescent on arrival. The drinking water was found to be very bad; disinfectants were at once emptied into the tanks to prevent its further use, and a pure supply was afterwards provided. The forecastle and the sailors' effects were disinfected, and the ship's closets were cleansed and purified.

From table C it will be seen that one or two more vessels arrived with convalescents from Ague on board. In each instance the drinking water was emptied out, and the tanks, after scrubbing, were refilled with the Local Supply. The berths, etc., were also thoroughly cleansed.

OTHER DISEASES—

The S.S. "Ardmellie," from Smyrna, was visited on June 1st in Cumberland Basin, as the Customs' Officer reported a case of sickness. It was found not to be of an infectious nature.

On July 20th "The Straits of Belle Isle," from Montreal, arrived at Avonmouth with one man suffering from Dysentery. He was attended by a private medical man, and was sent home.

The S.S. "Diamond," from Montreal, was visited on the 30th November in Avonmouth Dock, as three men were reported sick by the Customs. A local medical man was in attendance upon these cases, which appeared to be Influenza and Bronchitis.

The year has been, on the whole, somewhat remarkable for the small number of imported cases of infectious sickness.

We are, Gentlemen,

Your obedient Servants,

D. S. DAVIES, M.D., D.P.H.,

Port Medical Officer of Health.

J. C. HEAVEN, L.R.C.P., D.P.H.,

Assistant Port Medical Officer of Health

Port Sanitary.

TABLE A.

SHIP INSPECTION AT BRISTOL, AVONMOUTH,

Showing particulars of such Inspection,

1891	Number of Ships Inspected.		Nationality.	Sanitary Condition.		Ventilation and Lighting of Living Spaces.			
						Light. Vent.			
March Qr.	Steam	107	British	251	In good order	191	With	281	271
	Sailing	181	Foreign	37	Not satisfactory	97	Without	7	17
June Qr.	Steam	135	British	293	In good order	231	With	330	323
	Sailing	200	Foreign	42	Not satisfactory	104	Without	5	12
Sept. Qr.	Steam	133	British	241	In good order	207	With	277	276
	Sailing	147	Foreign	39	Not satisfactory	73	Without	3	4
Dee. Qr.	Steam	161	British	377	In good order	321	With	417	413
	Sailing	258	Foreign	42	Not satisfactory	98	Without	2	6
	Steam	536	British	1162	Good	950	Lighted & ventilated	1305	1283
	Sailing	786	Foreign	160	Bad	372	Not light- ed or ven- tilated.	17	39
Totals for Year.		1322		1322		1322		1322	1322

In addition to the above, 446 Ships were met and spoken in
Re-visits to see to compliance with Notices given, of which

TABLE A.

AND PORTISHEAD, FOR THE YEAR 1891.

the Action taken, and Results.

Foul or defective w.c. s.	Decks over Fore-castle Leaking.	Total Number of Persons composing Crew.	Description of Defects.	Number of Defects.	Notices complied with.	
					Number of Notices given in respect of same.	Notices complied with.
2	33	2616	Total number of defects found in respect of lighting, leakages, ventilation, cleaning, repairs and foul deposit.	162	98	Known to be } complied with } 70
—	—	—				
—	35	3562	Total defects found as above ...	166	129	Ditto ditto 105
3	—	—				
—	17	3631				
1	—	—	Ditto ditto	105	97	Ditto ditto 75
—	29	4268				
5	—	—	Ditto ditto	177	115	Ditto Back ditto ditto 100 16
						Total 366
						Now in force ... 73
11	114	14077		610	439	
						439

the River, and Copies of the Port Sanitary Regulations served.

there were a large number, are not included in the above Table.

S. DIMOND,

Chief Port Inspector of Nuisances.

TABLE B.
SHOWING PROGRESSIVE WORK OF SHIP INSPECTION SINCE INSTITUTED.

Year.	Number of Ships Inspected	CONDITION.		NOTICES.		Percentage of work known to be done.
		Good.	Unsatisfactory.	Served.	Complied with.	
1885 (4 months)	191	109	82.	43 per cent.	34	41 per cent.
1886	722	577	145	20 per cent.	85	45 per cent.
1887	1461	1073	388	26 per cent.	270	69 per cent.
1888	1371	1072	299	22 per cent.	313	66 per cent.
1889	1339	995	344	25 per cent.	391	303
1890	1224	874	350	28 per cent.	386	314
1891	1322	950	372	28 per cent.	439	366
						83 per cent.

The Vessels unaccounted for left the Port and have not been seen since, but there is reason to think the required work has been done in most cases. It is the custom of many ship owners to get repairs done at loading ports, and those so done cannot be added to our returns for want of definite information.

Port Sanitary.

TABLE C.

Infectious Diseases on Vessels during the year 1891.

	Name of Ship.	Where from.	Nature of Disease.	No. of Cases	Died.	Recovered	REMARKS.
Jan. 24th	“Brazilian”	Valencia	Erysipelas	1	0	1	One man was treated for this disease by a Medical Man, who did not think it a serious case.
Jan. 24th	“ Flying Foam”	Oporto	Small Pox	1	0	1	Patients were removed to the Port Sanitary Hospital—all possible precaution was taken in respect of disinfection, cleaning, and fumigation.
Jan. 29th	“ Flying Foam”	Oporto	Small Pox	1	0	1	
May 21st	“Speranza”	Rosario	Enteric	1	1	0	A Seaman was removed to the Royal Infirmary, where he died. The forecastle was disinfected and fumigated, and the sick man's clothes were removed and disinfected.
Dec. 28th	“Dugmai”	Savannah	Enteric	1	1	0	The first mate sickened on December 3rd, and died after nine days illness; all precautions were taken in respect of disinfection, fumigation, and cleansing of water tanks.

Continued over page.

TABLE C—Continued.

Other Diseases.

		Name of Ship.	Where from.	Nature of Disease.	No. of Cases.	Died.	Recovered.	REMARKS.
Feb.	23	“Augusta”	Demerara	Ague	1	0	1	A Seaman was ill on the passage but was convalescent on arrival.
April	9th	ΔΕΣΠΟΙΝΑ. Γ. ΜΙΧΑΛΙΝΟΥ.	Smyrna <i>via</i> Hull	Enteric	0	0	0	A Seaman had died of Enteric Fever at Hull. Two men sick on arrival. Nothing serious. Water replaced. Forecastle cleansed.
May	31st	“Ardmellie”	Smyrna	Enteric	1	0	1	A man complained on arrival of stomach pains, nothing serious appeared to be the matter; attended General Hospital.
July	20th	“St. of Belle Isle”	Montreal	Dysentery	1	0	1	The man was attended by a Medical Man, and went home.
Aug.	10th	“A. Newman”	Wilmington	Ague	2	0	2	Two Seamen were treated at the Hospital and recovered. Drinking water emptied and new supplies taken in.
Aug.	22nd	“Endymion”	New York	Ague	1	0	1	Recovered under Medical treatment.
Sept.	15th	“Tortund”	<i>via</i> Falmouth	Scurvy	2	0	1	Two Seamen were sent to Hospital at Falmouth.
Oct.	23rd	“Brodrene”	Savannah	Ague	4	0	4	Three Seamen had recovered on arrival, but one man was removed to General Hospital; water was bad, forecastle, clothing, tanks, and barrels were disinfected.
Dec.	4th	“Taskar”	New York	Ague	1	0	0	One Seaman had suffered from Ague on the passage, but was convalescent on arrival.

474 Infected Articles of Clothing and Bedding were disinfected and returned to the Owners.

Port Sanitary.

TABLE D.

Return of Cases of Sickness reported to have occurred during the voyage,
or found on arrival in Port.

1891.	Small Pox.	Enteric Fever.	Pestilence and Ague.	Influenza.	Veneral Diseases.	Heart Diseases.	Bronchitis	Colds.	Indigestion & Stomach Complaints.	Lung Diseases.	Diver Disease.	Inflammation of Bowels.	Dysentery.	Seury.	Erysipelas.	Accidents.	Lost Overboard.	
January ...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
February ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
March ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
April ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
May ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
June ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
September ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
October ...	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—
November ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
December ...	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
TOTALS ...	2	2	9	6	7	1	1	5	4	1	1	1	2	1	4	3	3	3

ANNUAL REPORT OF CANAL BOAT INSPECTION
FOR THE YEAR 1891.

TO THE COMMITTEE OF THE
BRISTOL URBAN SANITARY AUTHORITY.

GENTLEMEN,

In compliance with section 3 of the Canal Boats Act, 1884, I beg to hand a report of the work done under the Acts and regulations made thereunder.

1.—The Port Inspector of Nuisances, who is the appointed Inspector of Canal Boats, visits the waters of the Port daily, and is remunerated in connection with his other duties.

2.—During the year, 70 Canal Boats were inspected in detail, and in 14 of them contraventions were found, the remainder were in good or fair condition.

As stated in previous reports, the Canal Boat traffic is but small in this district, and most of the boats are worked between certain points, and are chiefly owned by a large Carrying Firm and a few other persons, who do not usually permit women and children to be carried in the boats, and it is on rare occasions that any were found; thus, it seldom becomes necessary for men to occupy the fore cabins, which is a considerable gain to the men's comfort, as these places are mostly damp and unfit for occupation, especially in the older boats.

The cabins are generally maintained in fair order as regards the interiors, but dilapidations were found in seven boats, and excessive leakage in three others.

3. —SUMMARY OF GENERAL CONDITION.

A. Registration.

All the boats inspected were registered, but no register is kept by this Authority. The Registration Authority for the district is Bath.

B. Notification of Change of Masters.

None were made, as this Authority is not a Registration Authority.

C. Absence of Certificates.

Two cases were found. In one case the papers were being revised by another Authority, and in the other they had been mislaid.

D. Marking.

One case where the marking was obliterated was dealt with by notice.

E. Overcrowding.

No case came under observation.

F. Separation of Sexes.

As so few women and children travel in the boats, no infringements were noticed, and but little supervision was required in this respect, as it is seldom that more than two persons are found on the narrow boats.

G. Cleanliness and Ventilation.

Three cases were found where cleaning, painting, or ventilation was defective ; these were dealt with.

H. Removal of Bilge Water.

In two cases pumps were provided under notice, and undue leakage was also dealt with by notice ; the ordinary accumulations were regularly removed.

I. Notification of Infectious Disease.

No case was reported or found.

J. Refusal to Admit.

None. The Masters in this district are generally willing to assist the Inspector.

K. Water Vessels.

One inadequate water vessel was found and replaced under notice.

4.—Legal Proceedings.

None were required, all notices being complied with as soon as possible, though delay sometimes occurs through the limited Dock accommodation available.

Notices.

Eleven were served, all of which, I am informed, are complied with, but in two cases the boats have not returned here.

I am, Gentlemen,

Your obedient Servant,

S. DIMOND,

Inspector of Canal Boats.

CITY AND COUNTY OF BRISTOL.

Report of the Borough Surveyor on Works executed during the Year 1891.

During the year ended 31st December, 1891, 24 **Private Streets** of a total length of 2,628 yards, having been put in order to the satisfaction of your Committee, were declared Highways, and will in future be repaired out of the General District Rates.

Footpaths. The works executed on the footways of the Borough during the same period have been as follows :—

13,798	Superficial yards of New Paving laid
3,376	Ditto Old Paving re-laid
16,243	Lineal feet ... New Edging laid
16,671	Ditto Old Edging re-laid
13,026	Superficial feet ... New Crossings laid
7,440	Ditto Old Crossings re-laid
11,856	Superficial yards ... Tar Paving laid
1,240	Ditto Asphalte laid
679	Ditto Concrete Paving laid

Carriage-ways. The following works were executed in paved streets :—

13,062	Superficial yards New Stone Pitching laid
7,332	Ditto Old ditto re-laid
5,519	Ditto New Wood Paving laid
	Ditto Old ditto re-laid

On the Macadamized Roads,—including new streets—were used 17,350 tons of local broken stone, and 6,278 tons of stone of better quality from other places.

The Public Sewers have been cleaned and repaired wherever necessary. A portion of the main sewer adjoining the River Frome, where exposed, burst after a heavy storm, but has been re-instated and cased in concrete.

Cleansing, Ashing, and Street Watering. The contract for this work expired in 1891, but was renewed for 1 year only, as the Committee contemplated carrying out this work by day labour in addition to the cleansing of the 82 miles of steined roads. Thirty streets were added to the list for watering during the year.

Two heavy falls of snow took place in the early part of the year, but were fairly coped with by the employment of a number of casuals, in addition to the ordinary staff.

The works in connection with the construction of the "**Refuse Destructor**" at St. Philip's Marsh, have made considerable progress. The heavy foundation works of concrete carried to a depth of 30 feet below the surface of the soil in order to reach the gravel, have been completed, and the brick arches and steel flooring laid, on which the Destructor, Cremator, and Chimney Stack have to be built ; and for the execution of which your Committee have contracted with Messrs. Manlove, Alliott & Co. The arches to carry the approach road to the tipping platform have also been constructed.

Urinals. The existing urinals have been maintained in an efficient condition, and 7 new ones of a much improved construction have been put up, all having white glazed fire clay backs, adding to the cleanliness and appearance of these structures. The contract was also let, and the work has been proceeded with for the construction of a Water-closet Range and Lavatories for gentlemen at Hotwells, near the landing-stage at St. Vincent's Terrace.

Public Parks. The Public Parks and Open Spaces continued to occupy much of the attention of the Committee, and various improvements have been made in the paths and planting out. The laying out and fencing of **Gaunt's Ham** have been completed, and a Urinal erected. In **Victoria Park, Bedminster**, considerable progress has been made with the erection of the Iron-rail fence on the West side ; two new Urinals have been put up ; the South side, next Hill

Avenue, drained, and a large area adjoining the Great Western Railway, levelled, so as to be available for a playground. Two ornamental Drinking fountains have been erected at **Eastville Park**, as well as two Urinals, and lengths of fencing put up next the River and Stapleton Road. At **St. Agnes' Gardens**, the portion between Newfoundland Road and Thomas Street, has been planted with shrubs around the boundaries ; the rock-work massed and ornamented with plants, and the whole enclosed with a light unclimbable iron fence. Preparations have also been made for laying the whole of the area with tar paving. An ornamental cast-iron Drinking fountain has been erected at **Mina Road Park**.

Inspection of Public Buildings. During the year 1891, the Public Health Acts Amendment Act, 1890, was adopted, whereby the Sanitary Authority have to be satisfied that all buildings used for public purposes are substantially constructed, and have means of egress which are ample, safe, and convenient for the number of persons likely to assemble. The Licensing Magistrates having received a large number of applications from persons desirous of having licenses for music, singing, or dancing, to be performed on their premises ; these had to be inspected and reported on, and considered by your Committee. The number of buildings surveyed was 224 : of these it was considered that 75 required no structural alterations ; and of the remainder, 121 complied with the requirements of the Committee. The number of Certificates granted was 196.

FREDERICK ASHMEAD, M. Inst., C.E.
Borough Engineer and Surveyor.

T. H. YABBICOM, A.M. Inst., C.E.
Deputy Borough Engineer and Surveyor.

